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NTC ORLANDO
5090.3a

BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT FOR STUDY AREA 42 NTC ORLANDO FL

11/1/1999

ABB ENVIRONMENTAL

Harding Lawson Associates

November 24, 1999

Southern Division Naval Facilities Engineering Command
P.O. Box 190010
2155 Eagle Dr.
North Charleston, SC 29419-9010

ATTN: Ms. Barbara Nwokike, Code 187300

Subject: **BRAC Environmental Site Screening Reports**
Study Areas 23 and 42
NTC, Orlando
Contract: N62467-89-D-0317

Dear Barbara:

Enclosed are two copies each of the final BRAC Environmental Site Screening Reports for Study Areas 23 and 42. These reports were approved by the BCT during the November OPT meeting in Orlando. We have also transmitted copies of the report to the normal distribution list for final documents.

Should you have any questions or need additional information, please call me at (904) 772-7688.

Very Truly Yours,

Harding Lawson Associates

Richard P. Allen
Project Technical Lead

Attachment

cc: Wayne Hansel, SOUTHNAVFACENGCOM (4 copies)
Nancy Rodriguez, USEPA Region IV (2 copies)
David Grabka, FDEP (2 copies)
Steve McCoy, Tetra Tech NUS (1 copy)
Al Aikens, CH2M Hill (1 copy)
John Kaiser (2 copies)

01.03.42.0001

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BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT STUDY AREA 42

NAVAL TRAINING CENTER ORLANDO, FLORIDA

UNIT IDENTIFICATION CODE: N65928
CONTRACT NO.: N62467-89-D-0317/107

NOVEMBER 1999

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORTH CHARLESTON, SOUTH CAROLINA 29418

Harding Lawson Associates
Engineering and Environmental Services
2590 Executive Center Circle East
Tallahassee, Florida 32301 - (850) 656-1293

BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING REPORT

STUDY AREA 42

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Unit Identification Code: N65928

Contract No.: N62467-89-D-0317/107

Prepared by:

Harding Lawson Associates
2590 Executive Center Circle, East
Tallahassee, Florida 32301

Prepared for:

Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29418

Barbara Nwokike, Code 1873, Engineer-in-Charge

November 1999

CERTIFICATION OF TECHNICAL
DATA CONFORMITY (MAY 1987)

The Contractor, Harding Lawson Associates (formerly ABB Environmental Services, Inc.), hereby certifies that, to the best of its knowledge and belief, the technical data delivered herewith under Contract No. N62467-89-D-0317/107 are complete and accurate and comply with all requirements of this contract.

DATE: November 23, 1999

NAME AND TITLE OF CERTIFYING OFFICIAL: John Kaiser
Task Order Manager

NAME AND TITLE OF CERTIFYING OFFICIAL: Richard Allen
Project Technical Lead

(DFAR 252.227-7036)

TABLE OF CONTENTS

BRAC Environmental Site Screening Report
Study Area 42
Naval Training Center
Orlando, Florida

LIST OF FIGURES

BRAC Environmental Site Screening Report
Study Area 42
Naval Training Center
Orlando, Florida

GLOSSARY

ABB-ES	ABB Environmental Services, Inc.
bls	below land surface
CLP	Contract Laboratory Program
DQO	data quality objective
FDEP	Florida Department of Environmental Protection
FGGC	Florida groundwater guidance concentration
HLA	Harding Lawson Associates
MCL	maximum contaminant level
µg/kg	micrograms per kilogram
NTC	Naval Training Center
OPT	Orlando Partnering Team
PCB	polychlorinated biphenyl
RBC	risk-based concentration
SA	study area
SCG	soil cleanup goal
SVOC	semivolatile organic compound
TAL	target analyte list
TCL	target compound list
TPH	total petroleum hydrocarbons
USEPA	U.S. Environmental Protection Agency

1.0 STUDY AREA 42, BUILDING 2055, AIR CONDITIONER AND VENDING MACHINE MAINTENANCE

This report contains information gathered during site screening activities conducted at Study Area (SA) 42 by Harding Lawson Associates (HLA) (formerly ABB Environmental Services, Inc. [ABB-ES]). Initial site screening investigations proposed in the Site Screening Plan (ABB-ES, 1995) were conducted between June 24 and November 6, 1997. Additional site activities were conducted on February 26, 1998, in response to data collected during the initial screening events. The site screening investigation resulted in the recommendation and implementation of a limited soil removal at the site.

1.1 BACKGROUND AND CONDITIONS. SA 42 is located south of Iwo Jima Street and west of Leahy Avenue on the Main Base of the Naval Training Center (NTC), Orlando, Florida (Figure 1). Buildings 2055 and 2056 were built in 1943, and were used at least since 1945 as classrooms. Drawings of the buildings indicate that both included laboratory facilities. In 1969, the two buildings were connected by an addition, and the western half was renumbered as part of Building 2055. Most recently, the eastern half of the building has been occupied by the Morale, Welfare, and Recreation office and used for vending machine maintenance. The western half of the building contains the NTC, Orlando, air conditioning maintenance contractor mechanical shops, administrative offices, and storage rooms. Additional details can be found in the Site Screening Plan (ABB-ES, 1995).

1.2 SAMPLING RATIONALE. Areas of environmental interest at the site include flammable storage areas at the northwest and southeast (locker removed) corners of the building, an air conditioner pad on the east end of the building where stained concrete was observed, and the concrete sumps on the north side of the building. Sinks in the laboratories may have been connected to the concrete sumps located on the north side of the buildings.

1.3 INITIAL SITE SCREENING INVESTIGATION SUMMARY. The site screening investigation was intended to evaluate the potential for release of contaminants to environmental media due to past site practices. Historical site activities and current site conditions were used to determine sampling locations.

1.3.1 Sampling Program Based on the rationale presented in the Site Screening Plan (ABB-ES, 1995), samples were collected near each of the flammable storage locations, the two concrete sumps, and the stained concrete pad.

1.3.1.1 **Surface Soil Sampling** Three surface soil samples were collected from the areas of interest around Building 2055. Surface soil sample 42S00101 was collected near the flammable storage locker at the northwest corner of the building. One sample, 42S00201, was collected adjacent to the stained area on the concrete air conditioner pad at the east end of the building. Sample 42S00301 was collected near the former location of a flammable storage locker at the southeast corner of the building.

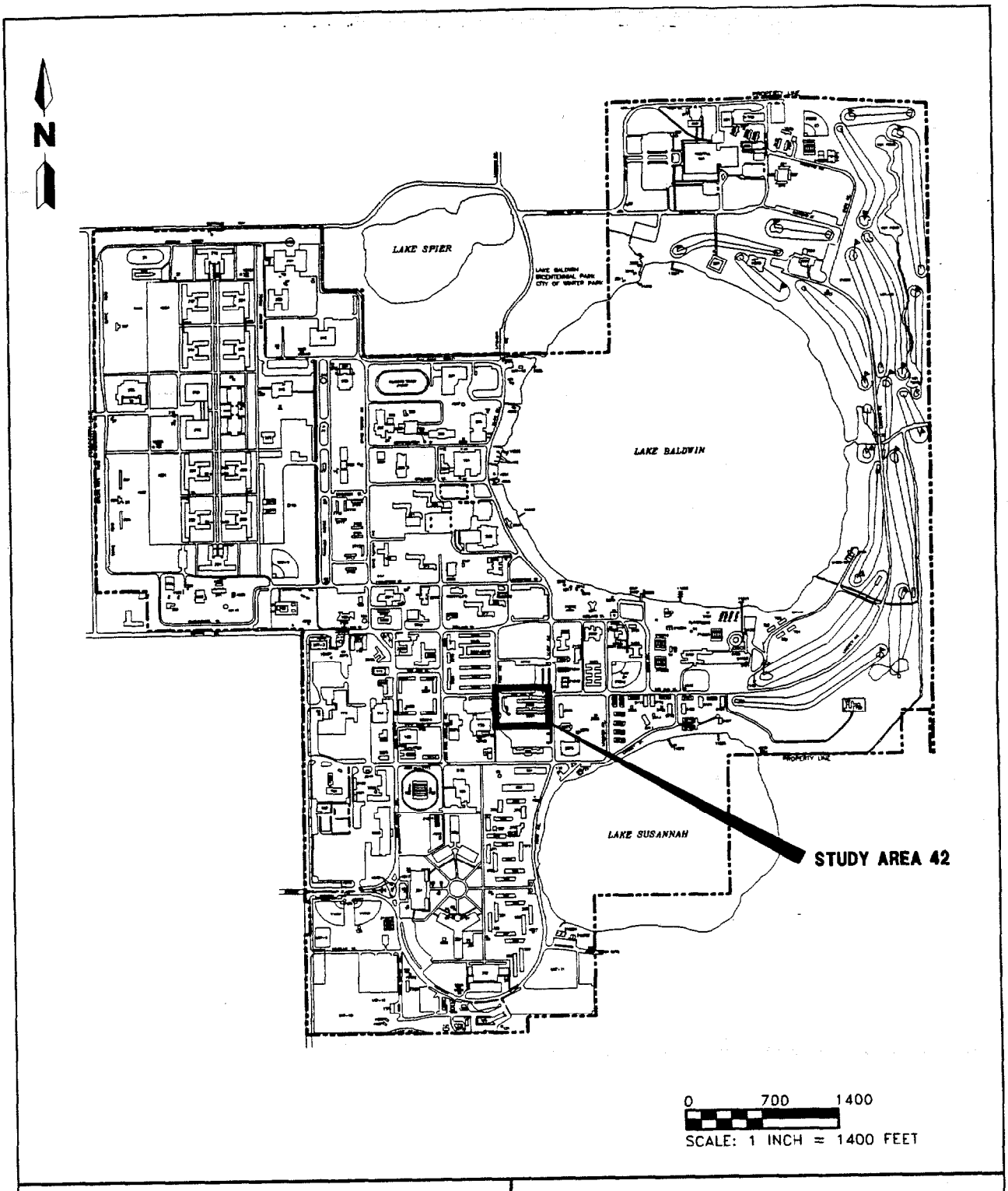


FIGURE 1
LOCATION OF STUDY AREA 42

K:\02530\02530-09\SSR\02530532.DWG. MAW-NP 05/29/98 13:27:51. AutoCAD R14

BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT, STUDY AREA 42

NAVAL TRAINING CENTER ORLANDO, FLORIDA

The surface soil samples were submitted to an approved laboratory for full suite Contract Laboratory Program (CLP) target compound list (TCL) and target analyte list (TAL) laboratory analysis plus pesticides and polychlorinated biphenyls (PCBs), along with total petroleum hydrocarbons (TPH), in accordance with U.S. Environmental Protection Agency (USEPA) Level IV data quality objectives (DQOs).

1.3.1.2 **Soil Boring Investigation and Subsurface Soil Sampling** A total of six subsurface soil samples was collected from four locations at the site. One soil boring was advanced in the area of the northwest flammable storage locker. A subsurface soil sample, 42B00101, was collected from a depth of 4 to 5 feet. Two subsurface soil samples, 42B00201 and 42B00202, were collected from 4 to 5 and 5 to 6 feet below land surface (bls), from an area adjacent to the square concrete sump. Sample 42B00301 was collected from a depth of 3.5 to 4.5 feet from an area to the south of the area where the flammable storage locker was removed on the south side of Building 2055. Two subsurface soil samples, 42B00401 and 42B00402, were also collected from 4 to 5 and 5 to 6 feet bls from an area adjacent to the round concrete sump.

The subsurface soil samples were submitted for full suite CLP TCL and TAL laboratory analysis plus pesticides and PCBs, along with TPH, in accordance with USEPA Level IV DQOs.

1.3.1.3 **Groundwater Monitoring Well Installation and Sampling** Three monitoring wells, OLD-42-01, OLD-42-02, and OLD-42-03, were installed during the field investigation (Figure 2). Attempts to install temporary wells in hand auger borings were unsuccessful due to a hard silt layer that was encountered at approximately 7 feet bls. Accordingly, the three soil borings were advanced with a hollow stem auger drill rig to a total depth of approximately 16 feet. The soil borings were all completed as monitoring wells. The screened interval for each monitoring well bracketed the water table, which was encountered at 4 to 8 feet bls during the investigation. A groundwater sample was collected from each well using low-flow sampling techniques (ABB-ES, 1997). Groundwater samples were submitted to an approved laboratory for full suite CLP TCL and TAL laboratory analysis plus pesticides and PCBs, along with TPH and suspended solids analysis, in accordance with USEPA Level IV DQOs. Filtered samples (0.45-micron in-line filter) were also collected and submitted for TAL metals analysis.

Monitoring well installation diagrams and field sample data are included in Appendix A.

1.3.2 Results. Analytical results from the media sampled at SA 42 are presented as Summary of Positive Detections Tables in Appendix B. A complete set of analytical results is presented in Appendix C. The analytical results of the surface and subsurface soil samples collected during the initial phase of site screening were evaluated by comparing the concentration of the various compounds detected to screening criteria, including basewide soil background screening levels, Florida Department of Environmental Protection's (FDEP's) soil cleanup goals (SCGs), and USEPA Region III risk-based concentrations (RBCs).

Groundwater analytical data are compared to background screening values, Florida Department of Environmental Protection groundwater guidance concentrations (FGGCs), Federal maximum contaminant levels (MCL), and USEPA Region III RBCs for tap water.

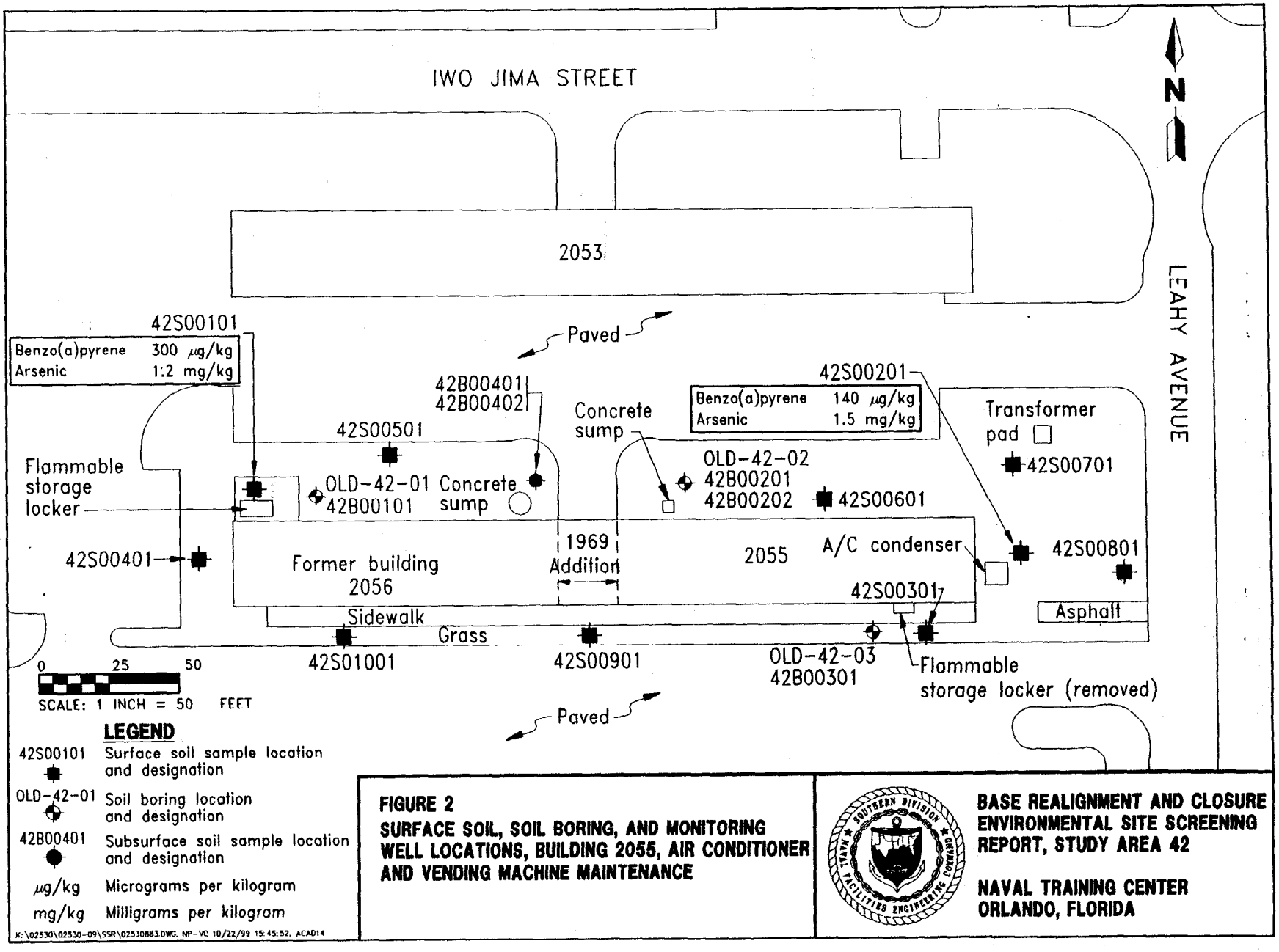


FIGURE 2
SURFACE SOIL, SOIL BORING, AND MONITORING WELL LOCATIONS, BUILDING 2055, AIR CONDITIONER AND VENDING MACHINE MAINTENANCE

BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT, STUDY AREA 42

NAVAL TRAINING CENTER ORLANDO, FLORIDA

1.3.2.1 **Surface Soil Analytical Results** Analysis of the surface soil collected at SA 42 detected semivolatile organic compounds (SVOCs) and a number of metals (Appendix B-1).

Benzo(a)pyrene, was detected at concentrations exceeding screening criteria. Concentrations of benzo(a)pyrene in samples 42S00101 and 42S00201 ranged from 140 micrograms per kilogram (µg/kg) to 300 µg/kg, exceeding both the Florida residential SCG (100 µg/kg) and the USEPA Region III RBC for residential soil (88 µg/kg).

Arsenic was detected in two surface soil samples at concentrations above the residential SCTL of 0.8 mg/kg and the site-specific background of 1.0 mg/kg. The arsenic concentrations detected were 1.2 mg/kg in 42S00101 and 1.5 mg/kg in 42S00201.

1.3.2.2 **Subsurface Soil Analytical Results** Analysis of the subsurface soil collected at SA 42 detected SVOCs and metals (Appendix B-2). None of the analytes detected in the samples from SA 42 were at concentrations exceeding screening values.

1.3.2.3 **Groundwater Analytical Results** Analysis of the groundwater collected at SA 42 detected volatile organic compounds, SVOCs, pesticides, and metals (Appendix B-3). The analytes detected in the groundwater samples from SA 42 were at concentrations below their respective screening criteria.

1.4 ADDITIONAL SCREENING INVESTIGATION SUMMARY. After reviewing the data collected during the initial site screening investigation, the Orlando Partnering Team (OPT) determined that additional surface soil sampling was warranted at SA 42. The existing dataset consisted of biased samples collected in areas where releases may potentially have occurred. In order to evaluate the distribution of benzo(a)pyrene, and support a preliminary risk evaluation, if necessary, additional surface soil samples were collected.

1.4.1 Sampling Program Seven additional surface soil samples were collected from the grassy areas surrounding Building 2055 (Figure 2). One surface soil sample (42S00401) was collected in the relatively narrow grass area between the west end of Building 2055 and the parking area to the west. Air conditioner maintenance contractor personnel reported that equipment was washed in this area. Two surface soil samples (42S00501 and 42S00601) were collected from the north side of Building 2055, one close to the building and one close to the parking area to the north. Two surface soil samples (42S00701 and 42S00801) were collected at the east end of the site, one adjacent to Leahy Avenue and the other between Building 2055 and a pad-mounted transformer. The final two surface soil samples were collected from the narrow grass strip between the sidewalk along the south side of Building 2055 and the parking lot to the south.

1.4.2 Results Analysis of the additional soil samples collected from SA 42 detected SVOCs (Appendix B-1). A single SVOC, benzo(a)pyrene, was detected at a concentration equal to the Florida SCG (100 µg/kg) in sample 42S00801. The sample was collected in close proximity to Leahy Avenue at the eastern end of the site (Figure 2).

1.5 SA 42, CONCLUSIONS AND RECOMMENDATIONS. The analytical results from media sampled at SA 42 indicated that benzo(a)pyrene and arsenic were present at two surface soil locations at concentrations exceeding residential screening criteria.

Benzo(a)pyrene was detected in two surface soil samples (42S00101 and 42S00201) at concentrations ranging from 140 to 300 µg/kg. These concentrations exceed the residential SCTL and RBC for surface soil. This area of the base has been developed and urbanized since the base was established. Semivolatile compounds, including benzo(a)pyrene, are not uncommon in urban areas where petroleum products have been used. Benzo(a)pyrene was also detected in sample 42S00801 at a concentration equal to the Florida SCTL (100 µg/kg).

Arsenic was detected in two surface soil samples (42S00101 and 42S00201) at concentrations of 1.2 and 1.5 mg/kg. These concentrations exceed the residential SCTL and the established background screening value for surface soil. This area of the base has been developed and urbanized since the base was established. The detection of arsenic at these concentrations may be indicative of routine past application of arsenic-containing pesticides.

1.6 INTERIM REMEDIAL ACTION. Based on the results of the site screening investigation, two areas at SA 42 were identified where benzo(a)pyrene concentrations in surface soils exceeded residential screening criteria (Figure 2). In addition, arsenic concentrations in these two surface soil samples also were marginally above the site specific background concentration. The area of the base occupied by SA 42 is intended for a residential re-use scenario. Accordingly, the OPT determined that a limited soil removal, completed in the vicinity of soil samples 42S00101 and 42S00201, would be protective of human health and the environment. This approach is consistent with interim remedial actions (IRAs) at several other SAs that had minor exceedances of residential SCTLs for one or more compounds.

1.6.1 IRA Specifications After evaluating the site screening data, a fact sheet was prepared which described the planned IRA implementation (Appendix D). The objective of the IRA was to excavate and properly dispose of surface soils from locations 42S001 and 42S002 where benzo(a)pyrene concentrations were greater than the FDEP residential SCTL. A sampling scheme was specified in the fact sheet to confirm when sufficient soil had been removed from the locations to achieve the IRA objective.

1.6.2 Soil Removal - Interim Remedial Action Execution The Environmental Detachment, Charleston (DET) performed the IRA as specified in the fact sheet. The Completion Report prepared by the DET is included as Appendix E. Two areas were excavated and approximately 11 tons of soil were removed from the site. The excavation at the 42S001 sample location was approximately 10 feet by 12 feet to a depth of 1 foot. The excavation at the 42S002 sample location was 10 feet by 10 feet to a depth of 1 foot. Analytical samples collected by the DET from the edges of the excavations had PAH concentrations below SCTLs.

1.7 CONCLUSIONS AND RECOMMENDATIONS. Data collected during the site screening investigation at SA 42 indicated that surface soil at two sample locations had benzo(a)pyrene and arsenic concentrations above the FDEP SCTL for residential soil. An IRA was conducted to remediate the surface soils in the vicinity of

these two sample locations. The results presented in the Completion Report prepared by the DET indicate the RGOs for benzo(a)pyrene were met. Based on available information, the remedial activities at SA 42 should be protective of human health and the environment for exposure to surface soil at the site.

HLA recommends that SA 42 be made eligible for transfer, and that the site be reclassified from 7/Gray to 4/Dark Green.

The undersigned members of the Base Realignment and Closure Team concur with the findings and recommendations of the preceding investigation.

STUDY AREA 42

Nancy Barnes — 11-18-99

U.S. Environmental Protection Agency, Region IV — Date

David L. Gratz — 11-18-99

Florida Department of Environmental Protection — Date

Wayne Hansel — 11-18-99

U.S. Department of the Navy — Date

REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1995. *Site Screening Plan, Groups I through IV Study Areas and Miscellaneous Additional Sites, Naval Training Center (NTC), Orlando, Florida.* Prepared for Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM), North Charleston, South Carolina.

ABB-ES. 1997. *Project Operations Plan for Site Investigations and Remedial Investigations, NTC, Orlando, Florida.* Prepared for SOUTHNAVFACENGCOM, North Charleston, South Carolina.

APPENDIX A

MONITORING WELL INSTALLATION DIAGRAMS, AND GROUNDWATER SAMPLE FIELD DATA

Appendix A-1 Monitoring Well Installation Diagrams
Appendix A-2 Groundwater Sample Field Data
Appendix A-3 Surface and Subsurface Soil Sample Field Data

APPENDIX A-1

MONITORING WELL INSTALLATION DIAGRAMS

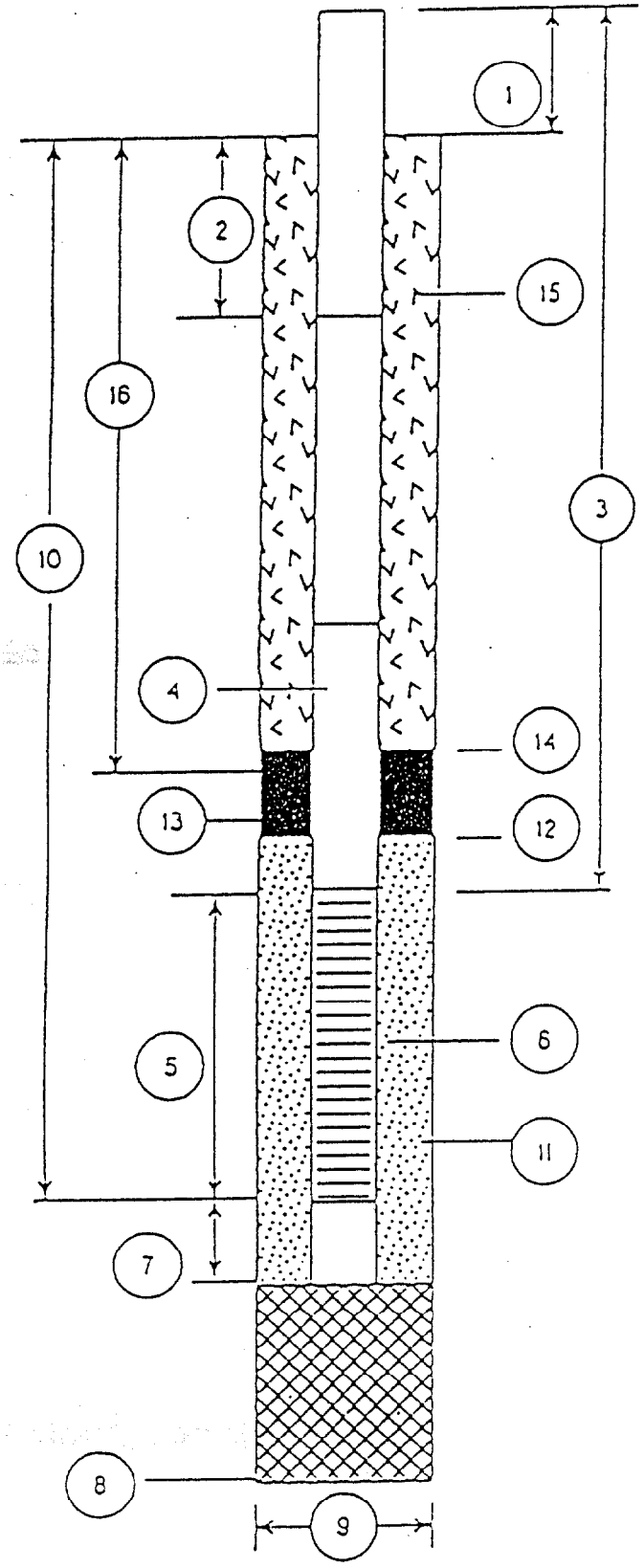
DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SC.

WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-42-01

DATE OF INSTALLATION: 10-6/97



1. Height of Casing above ground: FM
2. Depth to first Coupling: 6
   Coupling Interval Depths: 10'
3. Total Length of Riser Pipe: 6'
4. Type of Riser Pipe: 2" sched. 40 pvc
5. Length of Screen: 10'
6. Type of Screen: 2" sched 40 pvc 0.010 slot
7. Length of Sump: 6"
8. Total Depth of Boring: 16'
9. Diameter of Boring: 10"
10. Depth to Bottom of Screen: 16'
11. Type of Screen Filter: Silica sand
    Quantity Used: 600 lb Size: 20/40
12. Depth to Top of Filter: 4'
13. Type of Seal: fine Sand
    Quantity Used: 50 lb
14. Depth to Top of Seal: 2'
15. Type of Grout: Neat Portland
    Grout Mixture:
    Method of Placement: pour
16. Tot. Depth of 6 in. Steel Casing: N/A

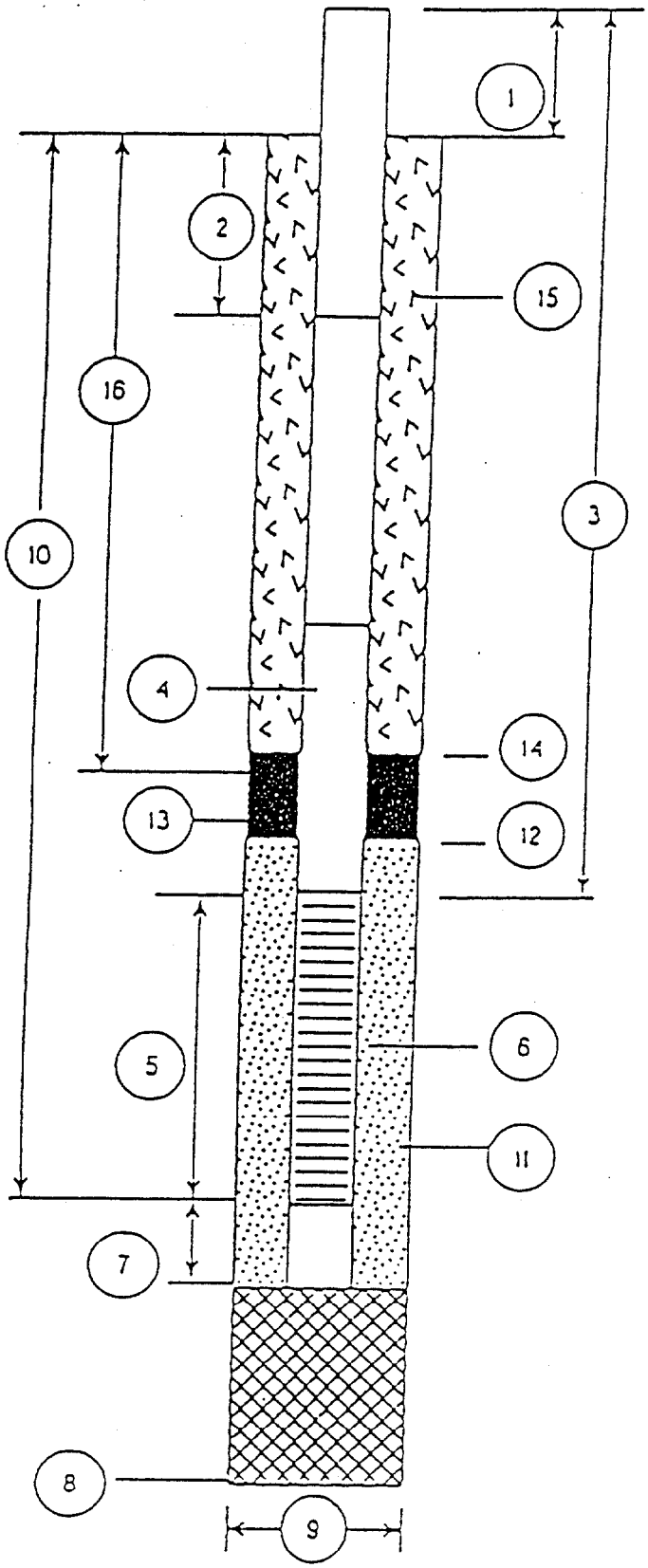
DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SC.

WELL CONSTRUCTION DETAIL

WELL NUMBER: OLD-42-02

DATE OF INSTALLATION: 10-6/94



1. Height of Casing above ground: FM
2. Depth to first Coupling: 6'
   Coupling Interval Depths: NA
3. Total Length of Riser Pipe: 6'
4. Type of Riser Pipe: 2" Sched 40 PVC
5. Length of Screen: 10'
6. Type of Screen: 2" sched 40 pvc 0.010 slot
7. Length of Sump: 6"
8. Total Depth of Boring: 16'
9. Diameter of Boring: 10"
10. Depth to Bottom of Screen: 16'
11. Type of Screen Filter: Silica Sand
    Quantity Used: 600 lb Size: 20/40
12. Depth to Top of Filter: 4'
13. Type of Seal: 60/45 fine Sand
    Quantity Used: 50 lb
14. Depth to Top of Seal: 2'
15. Type of Grout: Neat cement
    Grout Mixture:
    Method of Placement: Pour
16. Tot. Depth of 6 in. Steel Casing: NA

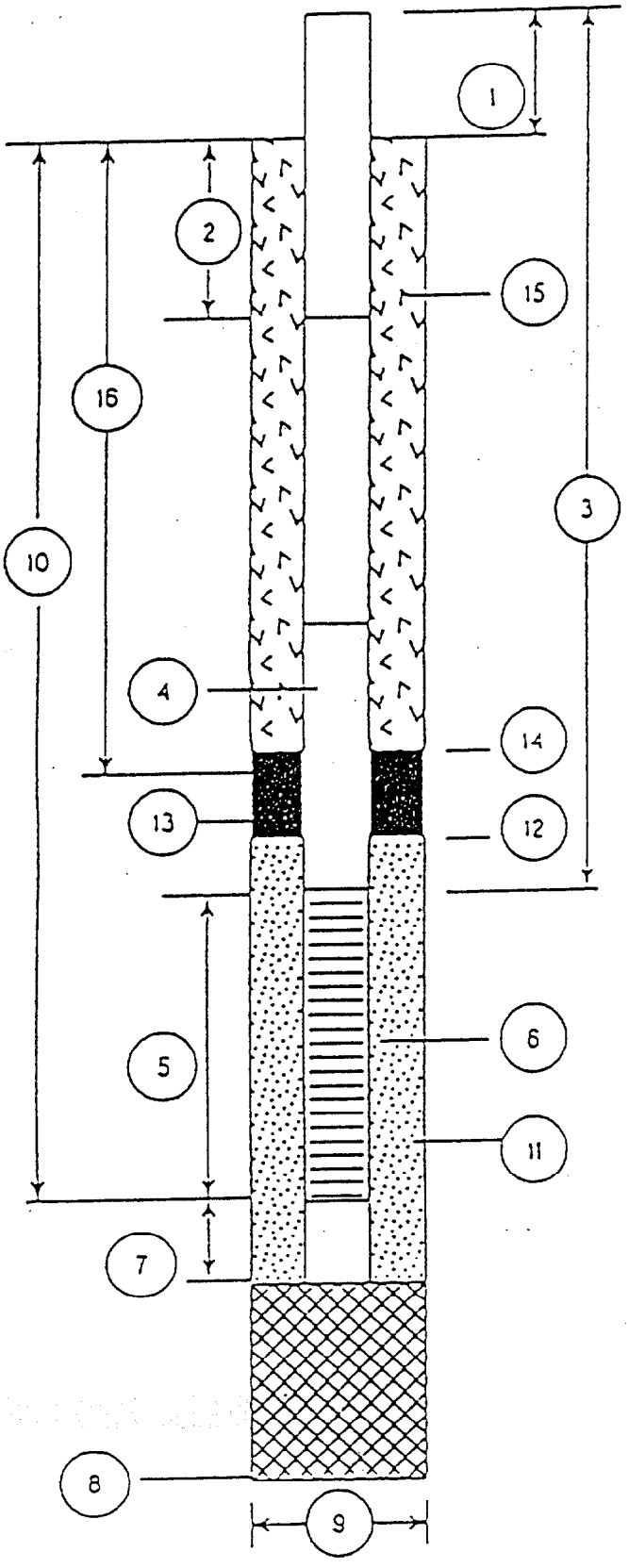
DEPARTMENT OF THE NAVY

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SC.

WELL CONSTRUCTION DETAIL

WELL NUMBER: QLD-42-93

DATE OF INSTALLATION: 10-6/97



1. Height of Casing above ground: FM
2. Depth to first Coupling: 6'
   Coupling Interval Depths: NA
3. Total Length of Riser Pipe: 6'
4. Type of Riser Pipe: 2" sched. 40 PVC
5. Length of Screen: 10'
6. Type of Screen: 2" sched. 40 PVC 0.010 slot
7. Length of Sump: 6"
8. Total Depth of Boring: 16'
9. Diameter of Boring: 10"
10. Depth to Bottom of Screen: 16'
11. Type of Screen Filter: Silica Sand
    Quantity Used: 500 lb Size: 20/40
12. Depth to Top of Filter: 3'
13. Type of Seal: 30/65 Sand
    Quantity Used: 50 lb
14. Depth to Top of Seal: 1'
15. Type of Grout: Neat cement
    Grout Mixture:
    Method of Placement: Pour
16. Tot. Depth of 6 in. Steel Casing: NA

APPENDIX A-2

GROUNDWATER SAMPLE FIELD DATA

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: OLD-42-01
Time: Start: 0755 End: 0955

Point of Interest: SA 42
Date: 11-6/97
Signature of Sampler: William D. Olson

Water Level/Well Data

Well Depth 15.95 Ft. — [X] Measured [ ] Historical
[X] Top of Well [ ] Top of Protective Casing
Well Riser Stick-up (from ground) FM Ft.
Protective Casing/Well Difference: X Ft.
Protective Casing: X Ft.

Depth to Water 3.80 Ft.
Well Material: [X] PVC [ ] SS
Well Locked?: [X] Yes [ ] No
Well Dia.: [X] 2 inch [ ] 4 inch [ ] 6 inch
Water Level Equip. Used: [X] Elect. Cond. Probe [ ] Float Activated [ ] Press. Transducer

Height of Water Column 12.15 Ft. X [X] .16 Gal/Ft. (2 in.) [ ] .65 Gal/Ft. (4 in.) [ ] 1.5 Gal/Ft. (6 in.) [ ] __ Gal/Ft. (__ in.) = [1.9 Gal/Vol] [6 Total Gal Purged]

Well Integrity:

	Yes	No
Prot. Casing Secure	X	
Concrete Collar Intact	X	
Other	X	

Equipment Documentation

Purging/Sampling Equipment Used:

(✓ If Used For) Purging	Sampling		Equipment ID
X	X	Peristaltic Pump	
		Submersible Pump	
		Bailer	
		PVC/Silicon Tubing	
X	X	Teflon/Silicon Tubing	
		Airlift	
		Hand Pump	
	X	In-line Filter	
		Press/Vac Filter	

Decontamination Fluids Used: (✓ All That Apply at Location)

- [ ] Methanol (100%)
- [ ] 25% Methanol/75% ASTM Type II water
- [X] Deionized Water
- [ ] Liquinox Solution
- [ ] Hexane
- [ ] HNO_3/D.I. Water Solution
- [ ] Potable Water
- [ ] None

Field Analysis Data

Ambient Air VOC 0 ppm Well Mouth 0 ppm Field Data Collected: [X] In-line [ ] In Container
Sample Observations: [ ] Turbid [X] Clear [ ] Cloudy [ ] Colored [ ] Odor

Purge Data	@ 2 Gal.	@ 3 1/2 Gal.	@ 4 1/2 Gal.	@ 5 Gal.	@ 6 Gal.
Temperature, Deg. C	23.0	24.0	24.0	24.0	24.0
pH, units	4.94	5.22	5.39	5.37	5.46
Specific Conductivity (umhos/cm @ 25 Deg. C)	80	72	70	70	70
~~Turbidity~~ NTU	81.3	16.47	8.32	5.79	5.42
~~Oxidation - Reduction, +/- mv~~					
~~Dissolved Oxygen, ppm~~					

Sample Collection Requirements (✓ If Required at this Location)

Analytical Parameter	✓ If Field Filtered	Preservation Method	Volume Required	✓ If Sample Collected	Sample Bottle IDs
VOA		HCL			
SVOA		4°C			
Pest/PCB		4°C			
Inorganics		HNO_3			
Explosives		4°C			
TPH		H_2SO_4			
TOC		H_2SO_4			
Nitrate		H_2SO_4			

Notes: 42H00101 = filtered metals, 0.45 u Filtered Turb = 0.22NTU
42G00101 = Full suite + TPH + TSS (add R-11, R-12 and R-22 to voc list)
Final turbidity = 3.17 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: OLD-42-02
Time: Start: 1000 End: 1155
Point of Interest: SA 42
Date: 11-6/97
Signature of Sampler: William D. Olson

Water Level/Well Data

Well Depth 15.97 Ft. — X Measured ___ Historical — X Top of Well ___ Top of Protective Casing — Well Riser Stick-up (from ground) FM Ft. — Protective Casing/Well Difference NA Ft. — Protective Casing NA Ft.

Depth to Water 7.95 Ft. — Well Material: X PVC ___ SS ___ — Well Locked?: X Yes ___ No — Well Dia. X 2 inch ___ 4 inch ___ 6 inch ___ — Water Level Equip. Used: X Elect. Cond. Probe ___ Float Activated ___ Press. Transducer ___

Height of Water Column 8.02 Ft. X [X .16 Gal/Ft. (2 in.) ___ .65 Gal/Ft. (4 in.) ___ 1.5 Gal/Ft. (6 in.) ___ ___ Gal/Ft. (___ in.)] = [1.3 Gal/Vol / 5 Total Gal Purged]

Well Integrity:

	Yes	No
Prot. Casing Secure	X	
Concrete Collar Intact	X	
Other ___	X	

Equipment Documentation

Purging/Sampling Equipment Used:

(✓ If Used For) Purging	Sampling		Equipment ID
X	X	Peristaltic Pump	
		Submersible Pump	
		Bailer	
		PVC/Silicon Tubing	
X	X	Teflon/Silicon Tubing	
		Airlift	
		Hand Pump	
	X	In-line Filter	
		Press/Vac Filter	

Decontamination Fluids Used:

(✓ All That Apply at Location)
___ Methanol (100%)
___ 25% Methanol/75% ASTM Type II water
X Deionized Water
___ Liquinox Solution
___ Hexane
___ HNO_3/D.I. Water Solution
___ Potable Water
___ None

Field Analysis Data

Ambient Air VOC 0 ppm Well Mouth 0 ppm Field Data Collected X In-line ___ In Container

Sample Observations: ___ Turbid X Clear ___ Cloudy ___ Colored ___ Odor

Purge Data	@ 1 Gal.	@ 2 1/2 Gal.	@ 3 Gal.	@ 4 1/2 Gal.	@ 5 Gal.
Temperature, Deg. C	24.5	25.0	25.0	25.0	25.0
pH, units	5.54	5.63	5.81	5.84	5.90
Specific Conductivity	80	80	80	80	80
~~(umhos/cm. @ 25 Deg. C.)~~ NTU	25.0	19.4	17.24	16.33	15.66
~~Oxidation - Reduction, +/- mv~~					
~~Dissolved Oxygen, ppm~~					

Sample Collection Requirements

(✓ If Required at this Location)

Analytical Parameter	✓ If Field Filtered	Preservation Method	Volume Required	✓ If Sample Collected	Sample Bottle IDs
VOA		HCL			
SVOA		4°C			
Pest/PCB		4°C			
Inorganics		HNO_3			
Explosives		4°C			
TPH		H_2SO_4			
TOC		H_2SO_4			
Nitrate		H_2SO_4			

Notes: 42H00201 = filtered metals, 0.45u, Fld. turb. = 0.48 NTU

42G00201 = Full suite + TPH + TSS

Final turbidity = 13.98 NTU

GROUNDWATER SAMPLE FIELD DATA

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: OLD-42-03
Time: Start: 1212 End: 1440

Point of Interest: SA 42
Date: 11-6/97
Signature of Sampler: William D. Olsen

Water Level/Well Data

Well Depth 15.72 Ft. — X Measured / ___ Historical

X Top of Well / ___ Top of Protective Casing ___ ___

Well Riser Stick-up (from ground) FM Ft.

Protective Casing/Well Difference NA Ft.

Protective Casing NA Ft.

Depth to Water 7.49 Ft.

Well Material: X PVC / ___ SS / ___

Well Locked?: X Yes / ___ No

Well Dia. X 2 inch / ___ 4 inch / ___ 6 inch ___ ___

Water Level Equip. Used: X Elect. Cond. Probe / ___ Float Activated / ___ Press. Transducer ___ ___

Height of Water Column 8.23 Ft. X

X .16 Gal/Ft. (2 in.) / ___ .65 Gal/Ft. (4 in.) / ___ 1.5 Gal/Ft. (6 in.) / ___ ___ Gal/Ft. (___ in.)

= [1.3 Gal/Vol ; 12 Total Gal Purged]

Well Integrity:

	Yes	No
Prot. Casing Secure	X	
Concrete Collar Intact	X	
Other ___	X	

Equipment Documentation

Purging/Sampling Equipment Used :

(✓ If Used For) Purging	Sampling		Equipment ID
X	X	Peristaltic Pump	
		Submersible Pump	
		Bailer	
		PVC/Silicon Tubing	
X	X	Teflon/Silicon Tubing	
		Airlift	
		Hand Pump	
	X	In-line Filter	
		Press/Vac Filter	

Decontamination Fluids Used :

(✓ All That Apply at Location)

___ Methanol (100%)
___ 25% Methanol/75% ASTM Type II water
X Deionized Water
___ Liquinox Solution
___ Hexane
___ HNO_3/D.I. Water Solution
___ Potable Water
___ None
___ ___
___ ___

Field Analysis Data

Ambient Air VOC Ø ppm Well Mouth Ø ppm Field Data Collected X In-line / ___ In Container

Sample Observations: ___ Turbid / X Clear / ___ Cloudy / ___ Colored / ___ Odor

Purge Data	@ INIT. Gal.	@ 5 Gal.	@ 10 Gal.	@ 11 Gal.	@ 12 Gal.
Temperature, Deg. C	30.0	29.0	29.0	29.0	29.0
pH, units	5.70	5.54	5.55	5.50	5.53
Specific Conductivity	59	50	53	58	58
~~(umhos/cm. @ 25 Deg. C.)~~ NTU	180.0	43.8	32.4	30.8	28.6
~~Oxidation-Reduction, +/- mv~~					
~~Dissolved Oxygen, ppm~~					

Sample Collection Requirements

(✓ If Required at this Location)

Analytical Parameter	✓ If Field Filtered	Preservation Method	Volume Required	✓ If Sample Collected	Sample Bottle IDs
VOA	___	HCL	___	___	___/___/___/___
SVOA	___	4°C	___	___	___/___/___/___
Pest/PCB	___	4°C	___	___	___/___/___/___
Inorganics	___	HNO_3	___	___	___/___/___/___
Explosives	___	4°C	___	___	___/___/___/___
TPH	___	H_2SO_4	___	___	___/___/___/___
TOC	___	H_2SO_4	___	___	___/___/___/___
Nitrate	___	H_2SO_4	___	___	___/___/___/___

Notes: 42H00301 = filtered metals, 0.45u, F.M. turb. = 0.26 NTU

42G00301 = Full Suite + TPH + TSS

Final Turbidity = 32.4 NTU

APPENDIX A-3

SURFACE AND SUBSURFACE SOIL SAMPLE FIELD DATA

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: H2500101
Time: Start: 1358 End: 1423

Site: SA 42
Date: 7-9/97
Signature of Sampler: William D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 0-1'

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [X] COLOR brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [ ] POTABLE WATER
- [ ] NONE

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

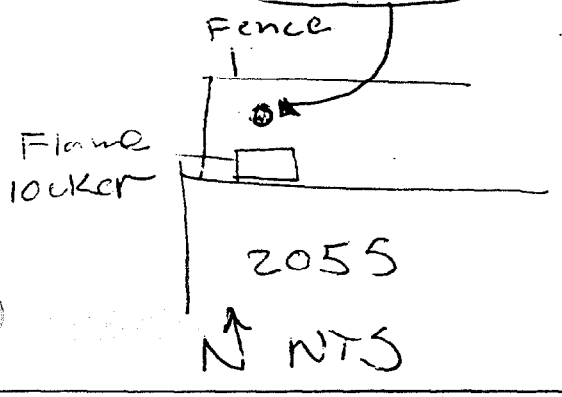
FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [X] YES
- [ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	

NOTES/SKETCH (H2500101) = Full Suite + TPH



SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: H2500201 + D
Time: Start: 1320 End: 1340

Site: SA 42
Date: 7-9/97
Signature of Sampler: William D. Obe

SOIL SAMPLE

DEPTH OF SAMPLE 0-1'

EQUIPMENT USED FOR COLLECTION:
[X] HAND AUGER
[ ] S.S. SPLIT SPOON
[ ] SHOVEL
[ ] HAND SPOON
[ ] ALUMINUM PANS
[ ] SS BUCKET
[ ] _____

TYPE OF SAMPLE COLLECTED:
[X] DISCRETE
[ ] COMPOSITE

SAMPLE OBSERVATIONS:
[ ] ODOR _____
[X] COLOR Brown
[ ] _____

DECONTAMINATION FLUIDS USED:
✓ ALL USED
[ ] ETHYL ALCOHOL
[ ] 25% METHANOL 75% ASTM TYPE II WATER
[X] DEIONIZED WATER
[X] LIQUINOX SOLUTION
[ ] HEXANE
[ ] HNO_3 SOLUTION
[ ] POTABLE WATER
[ ] NONE

SOIL TYPE:
[ ] CLAY
[X] SAND
[ ] ORGANIC
[ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

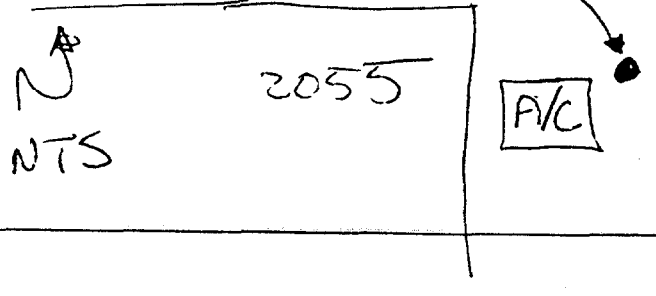
SAMPLE LOCATION SKETCH:
[ ] YES
[ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	

NOTES/SKETCH

H2500201 = Full Suite + TPH
H2500201D = Full Suite



SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42500301 + MS + MSD
Time: Start: 1340 End: 1358

Site: SA 42
Date: 7-9/97
Signature of Sampler: William Dodson

SOIL SAMPLE

DEPTH OF SAMPLE 0-1'

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [X] COLOR Brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL/75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [ ] POTABLE WATER
- [ ] NONE

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

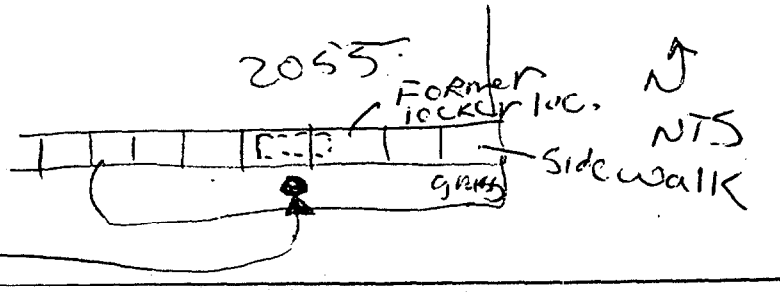
SAMPLE LOCATION SKETCH:
- [X] YES
- [ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	

NOTES/SKETCH

42500301 = Full Suite + TPH
42500301 MS = Full Suite
42500301 MSD = Full Suite



SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42B00101
Time: Start: 1530 End: 1540

Site: SA 42
Date: 7-9/97
Signature of Sampler: William D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 5-6'

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [ ] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR
- [X] COLOR light brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [ ] POTABLE WATER
- [ ] NONE

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [X] YES
- [ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
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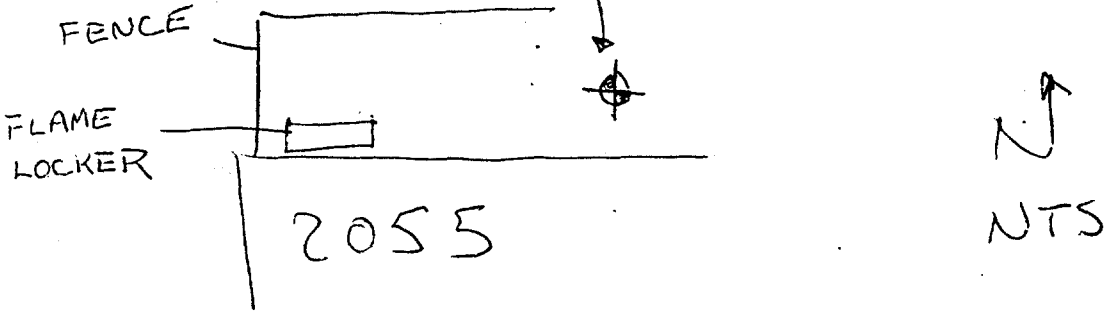
[ ]	[ ]	[ ]	[ ]		[ ]	

NOTES/SKETCH (42B00101 = Full Suite + TPH



SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42B00201
Time: Start: 1450 End: 1505

Site: SA 42
Date: 7-9/97
Signature of Sampler: William D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 4-5'

EQUIPMENT USED FOR COLLECTION:
[X] HAND AUGER
[ ] S.S. SPLIT SPOON
[ ] SHOVEL
[ ] HAND SPOON
[ ] ALUMINUM PANS
[ ] SS BUCKET
[ ] _____

TYPE OF SAMPLE COLLECTED:
[X] DISCRETE
[ ] COMPOSITE

SAMPLE OBSERVATIONS:
[ ] ODOR _____
[X] COLOR light Brown
[ ] _____

DECONTAMINATION FLUIDS USED:
✓ ALL USED
[ ] ETHYL ALCOHOL
[ ] 25% METHANOL 75% ASTM TYPE II WATER
[ ] DEIONIZED WATER
[X] LIQUINOX SOLUTION
[X] HEXANE
[ ] HNO_3 SOLUTION
[ ] POTABLE WATER
[ ] NONE

SOIL TYPE:
[ ] CLAY
[X] SAND
[ ] ORGANIC
[ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

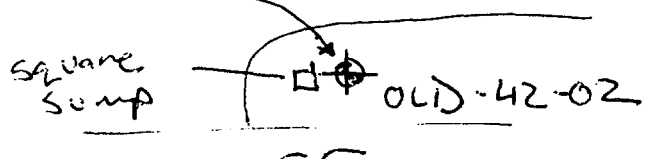
SAMPLE LOCATION SKETCH:
[X] YES
[ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	

NOTES/SKETCH

42B00201 = Full Suite + TPH



SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42B00202
Time: Start: 1505 End: 1515

Site: SA 42
Date: 7-9/97
Signature of Sampler: William D. Olsen

SOIL SAMPLE

DEPTH OF SAMPLE 5-6'

EQUIPMENT USED FOR COLLECTION:
[X] HAND AUGER
[ ] S.S. SPLIT SPOON
[ ] SHOVEL
[ ] HAND SPOON
[ ] ALUMINUM PANS
[ ] SS BUCKET
[ ] _____

TYPE OF SAMPLE COLLECTED:
[X] DISCRETE
[ ] COMPOSITE

SAMPLE OBSERVATIONS:
[ ] ODOR
[X] COLOR light brown
[ ] _____

DECONTAMINATION FLUIDS USED:
✓ ALL USED
[ ] ETHYL ALCOHOL
[ ] 25% METHANOL 75% ASTM TYPE II WATER
[X] DEIONIZED WATER
[X] LIQUINOX SOLUTION
[ ] HEXANE
[ ] HNO_3 SOLUTION
[ ] POTABLE WATER
[ ] NONE

SOIL TYPE:
[ ] CLAY
[X] SAND
[ ] ORGANIC
[ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
[ ] YES
[ ] NO See 42B00201

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /

NOTES/SKETCH 42B00 202 = Full Suite + TPH

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42B00301
Time: Start: 1423 End: 1450

Site: SA 42
Date: 7-9/97
Signature of Sampler: William D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 3.5 - 4.5

EQUIPMENT USED FOR COLLECTION:
[X] HAND AUGER
[ ] S.S. SPLIT SPOON
[ ] SHOVEL
[ ] HAND SPOON
[ ] ALUMINUM PANS
[ ] SS BUCKET
[ ] _____

TYPE OF SAMPLE COLLECTED:
[X] DISCRETE
[ ] COMPOSITE

SAMPLE OBSERVATIONS:
[ ] ODOR
[X] COLOR Light Brown
[ ] _____

DECONTAMINATION FLUIDS USED:
✓ ALL USED
[ ] ETHYL ALCOHOL
[ ] 25% METHANOL 75% ASTM TYPE II WATER
[X] DEIONIZED WATER
[X] LIQUINOX SOLUTION
[ ] HEXANE
[ ] HNO_3 SOLUTION
[ ] POTABLE WATER
[ ] NONE

SOIL TYPE:
[ ] CLAY
[X] SAND
[ ] ORGANIC
[ ] GRAVEL

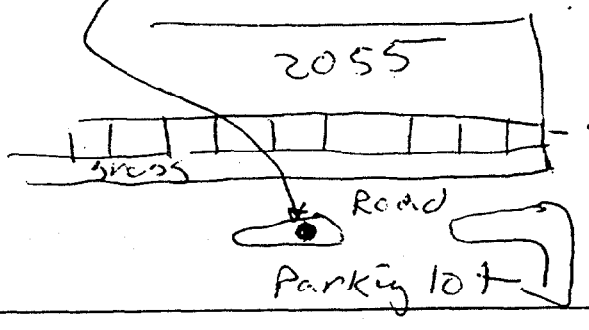
FIELD GC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
[X] YES
[ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	

NOTES/SKETCH (42B00301 = Full Suite + TPH



NTS

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42B00401
Time: Start: 1515 End: 1524

Site: SA 42
Date: 7-9-97
Signature of Sampler: Matthew D. Olsa

SOIL SAMPLE

DEPTH OF SAMPLE 4-5'

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR
- [X] COLOR light brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [ ] POTABLE WATER
- [ ] NONE

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

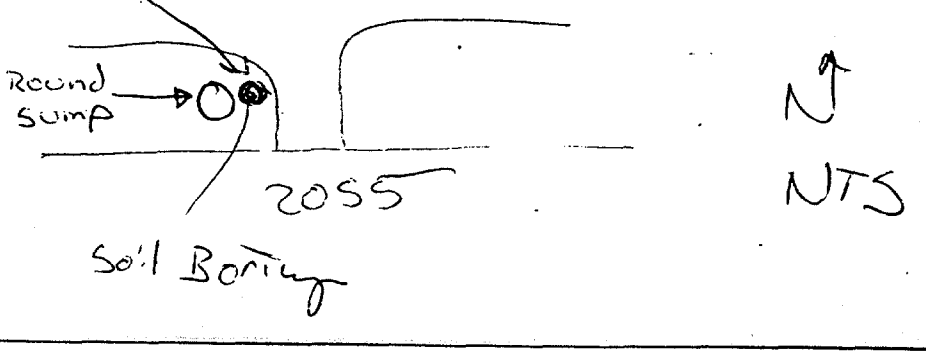
FIELD GC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [X] YES
- [ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	

NOTES/SKETCH (42B00401 = Full suite + TPH



SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42B00402
Time: Start: 1524 End: 1530

Site: SA 42
Date: 7-9/97
Signature of Sampler: William D. Olsen

SOIL SAMPLE

DEPTH OF SAMPLE 5-6'

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [ ] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [X] COLOR light brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [ ] 25% METHANOL/75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [ ] POTABLE WATER
- [ ] NONE

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [ ] YES
- [ ] NO

See 42B00401

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /
[ ]	[ ]	[ ]	[ ]		[ ]	/ / /

NOTES/SKETCH 42B00402 = Full Suite + TPH

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42500401
Time: Start: 0900 End: 0920

Site: SA 42
Date: 2-26-90
Signature of Sampler: Matt Dolan

SOIL SAMPLE

DEPTH OF SAMPLE 0-2'

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [X] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR
- [X] COLOR dark brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [X] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [ ] POTABLE WATER
- [ ] NONE

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD GC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [X] YES
- [ ] NO

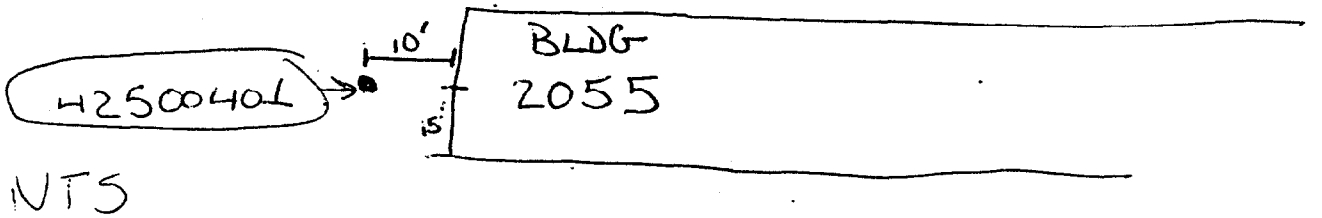
SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	

NOTES/SKETCH

N

42500401
42500401D
8310 PAH



NTS

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42500501
Time: Start: 0920 End: ~~0930~~ 0940

Site: SA 42
Date: 2-26/98
Signature of Sampler: William D. Olsen

SOIL SAMPLE

DEPTH OF SAMPLE 0-2'

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [X] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [X] COLOR reddish brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [X] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [ ] POTABLE WATER
- [ ] NONE

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [X] YES
- [ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
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NOTES/SKETCH

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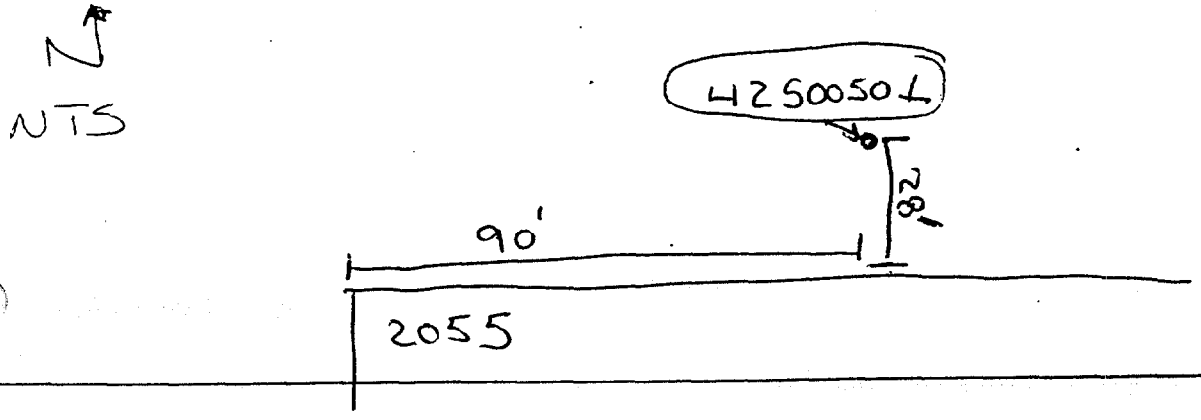

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42500601
Time: Start: 0940 End: 1000

Site: SA 42
Date: 2-26/98
Signature of Sampler: Will Dolser

SOIL SAMPLE

DEPTH OF SAMPLE 0-2'

EQUIPMENT USED FOR COLLECTION:
[X] HAND AUGER
[ ] S.S. SPLIT SPOON
[ ] SHOVEL
[X] HAND SPOON
[ ] ALUMINUM PANS
[ ] SS BUCKET
[ ] _____

TYPE OF SAMPLE COLLECTED:
[X] DISCRETE
[ ] COMPOSITE

SAMPLE OBSERVATIONS:
[ ] ODOR _____
[X] COLOR TAN
[ ] _____

DECONTAMINATION FLUIDS USED:
✓ ALL USED
[✓] ETHYL ALCOHOL
[X] 25% METHANOL 75% ASTM TYPE II WATER
[✓] DEIONIZED WATER
[X] LIQUINOX SOLUTION
[ ] HEXANE
[ ] HNO_3 SOLUTION
[ ] POTABLE WATER
[ ] NONE

SOIL TYPE:
[ ] CLAY
[X] SAND
[ ] ORGANIC
[ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
[X] YES
[ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
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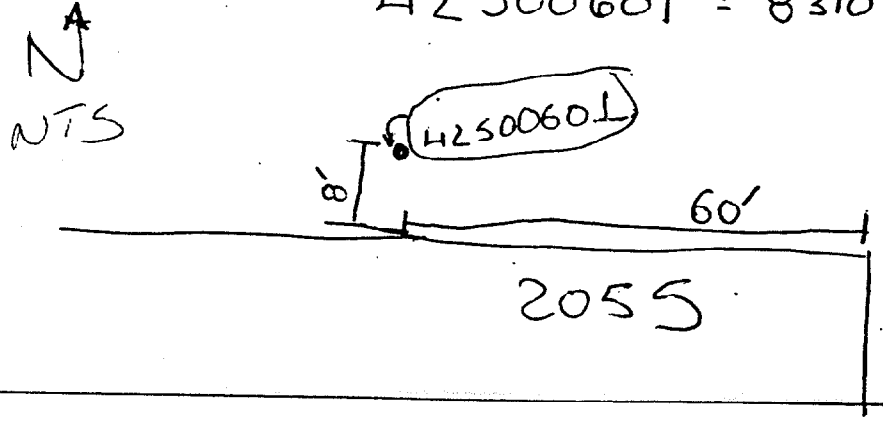
[ ]	[ ]	[ ]	[ ]		[ ]	

NOTES/SKETCH

42500601 = 8310 PAH



SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42500701
Time: Start: 1000 End: 1022

Site: SA 42
Date: 2-26/98
Signature of Sampler: Willis D. Olsen

SOIL SAMPLE

DEPTH OF SAMPLE 0-2'

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [X] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR
- [X] COLOR gray/brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [X] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [ ] POTABLE WATER
- [ ] NONE

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [X] YES
- [ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
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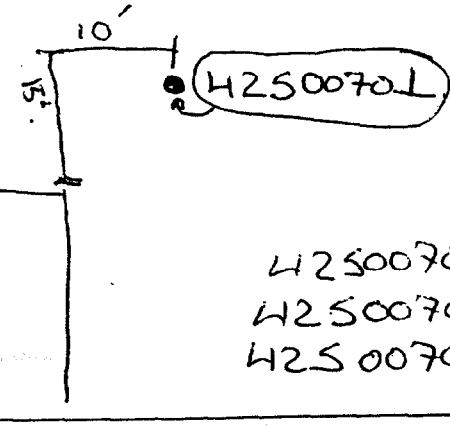
NOTES/SKETCH

N
NTS



2055

42500701
42500701 MS
42500701 MSD

8310 PAH

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42500801
Time: Start: 1022 End: 1030

Site: SA 42
Date: 2-26/98
Signature of Sampler: Walt. Dorsa

SOIL SAMPLE

DEPTH OF SAMPLE 0-2'

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [X] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [X] COLOR gray / brown
- [ ] _____

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [X] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [ ] POTABLE WATER
- [ ] NONE

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [X] YES
- [ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
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[ ]	[ ]	[ ]	[ ]		[ ]	

NOTES/SKETCH

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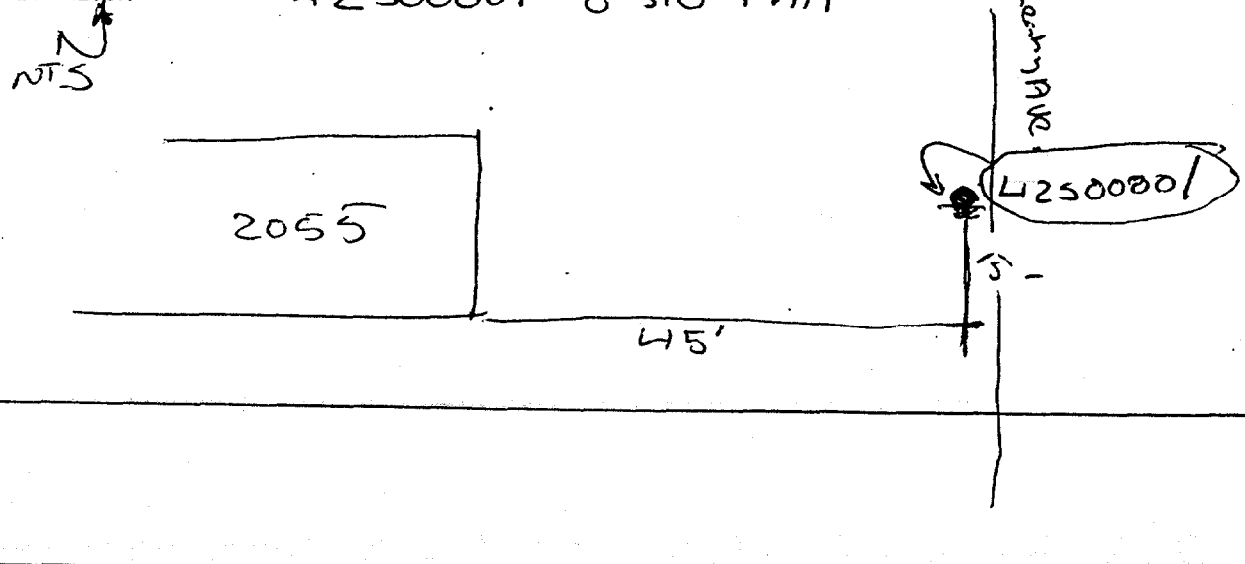

SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42500901
Time: Start: 1030 End: 1045

Site: SA 42
Date: 2-26/98
Signature of Sampler: Wilbur D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 0-2'

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [X] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [ ] COLOR Tan and gray
- [ ] Some lime rock

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [X] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [ ] POTABLE WATER
- [ ] NONE

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [X] YES
- [ ] NO

SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
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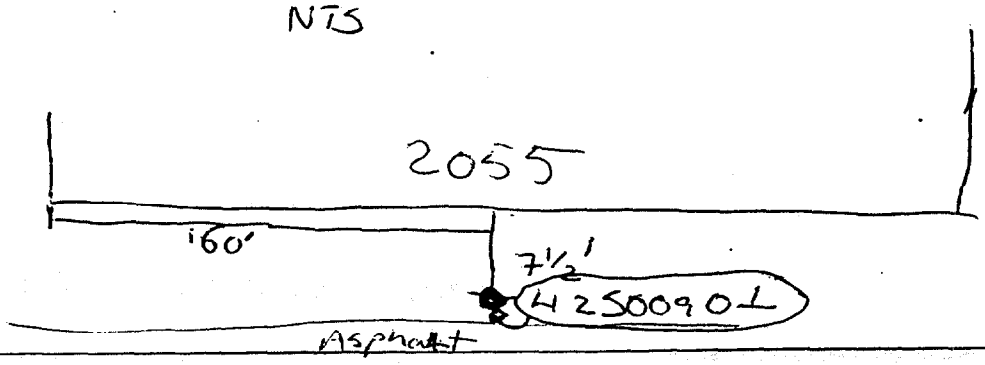
NOTES/SKETCH

42500901 = 8310 PAH

N
NTS



SURFACE SOIL SAMPLE FIELD DATA RECORD

Project: NTC ORLANDO
Project Number: 02530.05
Sample Location ID: 42501001
Time: Start: 1045 End: 1106

Site: SA 42
Date: 2-26/98
Signature of Sampler: Willa D. Olson

SOIL SAMPLE

DEPTH OF SAMPLE 0-2'

EQUIPMENT USED FOR COLLECTION:
- [X] HAND AUGER
- [ ] S.S. SPLIT SPOON
- [ ] SHOVEL
- [X] HAND SPOON
- [ ] ALUMINUM PANS
- [ ] SS BUCKET
- [ ] _____

TYPE OF SAMPLE COLLECTED:
- [X] DISCRETE
- [ ] COMPOSITE

SAMPLE OBSERVATIONS:
- [ ] ODOR _____
- [ ] COLOR Grey brown and dark brown / some limerock

DECONTAMINATION FLUIDS USED:
- ✓ ALL USED
- [ ] ETHYL ALCOHOL
- [X] 25% METHANOL 75% ASTM TYPE II WATER
- [X] DEIONIZED WATER
- [X] LIQUINOX SOLUTION
- [ ] HEXANE
- [ ] HNO_3 SOLUTION
- [ ] POTABLE WATER
- [ ] NONE

SOIL TYPE:
- [ ] CLAY
- [X] SAND
- [ ] ORGANIC
- [ ] GRAVEL

FIELD QC DATA: [ ] FIELD DUPLICATE COLLECTED
DUPLICATE ID _____

SAMPLE LOCATION SKETCH:
- [ ] YES
- [ ] NO

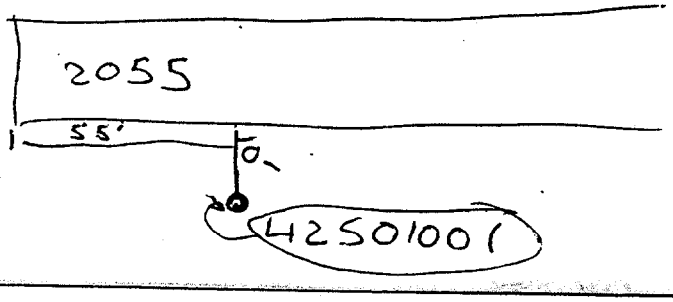
SAMPLES COLLECTED

✓ IF REQUIRED AT THIS LOCATION	MATRIX: SURFACE WATER	MATRIX: SEDIMENT	✓ IF PRESERVED WITH ACID-BASE	VOLUME REQUIRED	✓ IF SAMPLE COLLECTED	SAMPLE BOTTLE IDS
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	
[ ]	[ ]	[ ]	[ ]		[ ]	

NOTES/SKETCH

N
NTS

42501001 = 8310 PAH



APPENDIX B

SUMMARY OF POSITIVE DETECTIONS TABLES

TABLE B-1

SUMMARY OF POSITIVE DETECTIONS IN SURFACE SOIL

Appendix B
Table B-1. Summary of Positive Detections in Surface Soil Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Identifier	Background Screening[1]		SCTL[2] for Residential Soil		RBC[3] for Residential Soil		RBC[3] for Industrial Soil		42S00101		42S00201		42S00201D		42S00301		42S00401		42S00401D		42S00801	
Sampling Date									9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97		26-Feb-98		26-Feb-98		26-Feb-98	
Depth bls (ft)									0-1		0-1		0-1		0-1		0-1		0-1		0-1	
Semivolatile Organics, ug/kg																						
Acenaphthylene			670,000		2,300,000	n	61,000,000	n	220	J	91	J	85	J								
Anthracene			19,000,000		23,000,000	n	610,000,000	n	69	J												
Benzo(a)anthracene			1,400		880	c	7,800	c	160	J	39	J	70	J								
Benzo(a)pyrene			100		88	c	780	c	400	J	40	J	130	J			67		65		100	
Benzo(b)fluoranthene			1,400		880	c	7,800	c	430		260	J	230	J			77		76		120	
Benzo(g,h,i)perylene			2,300,000		2,300,000	n	61,000,000	n	59	J	35	J					81		82		130	
Benzo(k)fluoranthene			15,000		8,800	c	78,000	c	390		170	J	170	J			35		30		50	
Chrysene			140,000		88,000	c	780,000	c	440		150	J	200	J			63		62		110	
Fluoranthene			2,800,000		3,100,000	n	82,000,000	n	570		220	J	200	J			83		110			
Indeno(1,2,3-cd)pyrene			1,500		880	c	7,800	c	84	J	49	J	46	J							99	
Phenanthrene			1,900,000		2,300,000	n	61,000,000	n	220	J	51	J	46	J								
Pyrene			2,200,000		2,300,000	n	61,000,000	n	460		110	J	150	J			89		89		130	
Inorganics, mg/kg																						
Aluminum	2088		72,000		78,000	n	1,000,000	n	1020		1570		1650		1480		NA		NA		NA	
Arsenic	1.0		0.8		0.43 / 23	c/n	3.8 / 610	c/n	1.2	J	1.6	J	1	J			NA		NA		NA	
Barium	8.7		105		5,500	n	140,000	n	15	J	10.5	J	10.6	J	3.2	J	NA		NA		NA	
Beryllium	ND		120		0.15	c	1.3	c							0.06	J	NA		NA		NA	
Cadmium	0.98		75		39	n	1,000	n			0.94	J	1.5				NA		NA		NA	
Calcium	25295		ND		1,000,000		1,000,000		2140		2430		2730		2690		NA		NA		NA	
Chromium	5		290		390	n	10,000	n	2.6		3.9		4.2		1.8	J	NA		NA		NA	
Copper	4.1		105		3,100	n	82,000	n	6.9		24.8		21.1		0.91	J	NA		NA		NA	
Iron	712		23,000		23,000	n	610,000	n	548		674		618		483		NA		NA		NA	
Lead	14.5		500		400		400		125		191		172		12		NA		NA		NA	
Magnesium	328		ND		460,468		460,468		86.2	J	97.1	J	112	J	81	J	NA		NA		NA	
Manganese	8.1		1,600		1,800	n	47,000	n	19.5		16.2		15.8		4.7		NA		NA		NA	
Mercury	0.07		3.7		23	n	610	n	0.23	J							NA		NA		NA	
Potassium	210		ND		1,000,000		1,000,000				97.2	J	133	J	80.6	J	NA		NA		NA	
Selenium	1.1		390		390	n	10,000	n	0.82	J							NA		NA		NA	
Vanadium	3.1		15		550	n	14,000	n	2.2	J	1.6	J	1.8	J	1.2	J	NA		NA		NA	
Zinc	17.2		23,000		23,000	n	610,000	n	107		73.2		75.4				NA		NA		NA	
General Chemistry, mg/kg																						
Total Petroleum Hydrocarbons	ND		ND		ND		ND		260		NA						NA		NA		NA	

Notes for Summary of Positive Detections in Surface Soil Analytical Results Study Area 42

Naval Training Center, Orlando
Orlando, FL

NOTES:

[1] The background screening value is twice the average of detected concentrations for inorganic analytes.

[2] SCTL = Florida Department of Environmental Protection, Soil Cleanup Target Levels, Chapter 62-777 FAC, May 26, 1999.
Values indicated are for direct exposure scenario. Value for mercury is for inorganic mercury
Chromium values are for Chromium (IV).

[3] RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12). For essential nutrients (calcium, magnesium, potassium) screening values were derived based on recommended daily allowances (RDAs).
RBC for benzo(g,h,i)perylene and phenanthrene are not available, value is based on pyrene.

mg/kg = milligrams per kilogram.
ug/kg = micrograms per kilogram.

n = noncarcinogenic pathway
c = carcinogenic pathway

ND = Not determined.
NA = Not Analyzed.
bls = below land surface

OSWER = Office of Solid Waste and Emergency Response.
USEPA = U.S. Environmental Protection Agency.
FDEP = Florida Department of Environmental Protection

J = Reported concentration is an estimated quantity.
All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.
Bold/shaded values indicate exceedance of regulatory guidance and background.
Blank space indicates analyte/compound was not detected at the reporting limit.

TABLE B-2

SUMMARY OF POSITIVE DETECTIONS IN SUBSURFACE SOIL

Appendix B
Table B-2. Summary of Positive Detections in Subsurface Soil Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Identifier	Background Screening[1]	FDEP SCTL[2]	RBC[3] for Residential Soil	RBC[3] for Industrial Soil	42B00101	42B00201	42B00202	42B00301	42B00401	42B00402
Sampling Date					9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97
Depth bls (ft)					5-6	4-5	5-6	3.5-4.5	4-5	5-6
Semivolatile Organics, ug/kg										
2,6-Dinitrotoluene		NA	78,000 n	2,000,000 n		230 J				
Inorganics, mg/kg										
Aluminum	2,119	72,000	78,000 n	1,000,000 n	12100	549	245	1330	614	696
Arsenic	1.1	0.8	0.43 / 23 c/n	3.8 / 610 c/n	0.64 J					
Barium	3.6	105	5,500 n	140,000 n	1.5 J	1.8 J	0.63 J	2.1 J	1.6 J	1.6 J
Calcium	115	ND	1,000,000	1,000,000	350 J	358 J		8620		
Chromium	4	290	390 n	10,000 n	10.6	1.2 J	0.62 J	2 J	1.4 J	1.5 J
Copper	ND	105	3,100 n	82,000 n	0.6 J	0.44 J		0.41 J	0.36 J	
Iron	264	23,000	23,000 n	610,000 n	495	129	43.3	320	196	421
Lead	3.9	500	400	400	7.4	2.2	0.75	2.1	1.6	1.8
Magnesium	32.8	ND	460,468	460,468				123 J		
Manganese	8.1	1,600	1,800 n	47,000 n	0.64 J	0.98 J	0.55 J	1.9 J	0.83 J	0.92 J
Potassium	ND	ND	1,000,000	1,000,000	137 J	115 J			87.2 J	104 J
Selenium	1.3	390	390 n	10,000 n	0.82 J	0.68 J				
Vanadium	3.4	15	550 n	14,000 n	3.1 J			1.3 J	0.44 J	1.2 J

Notes for Summary of Positive Detections in Subsurface Soil Analytical Results Study Area 42

Naval Training Center, Orlando
Orlando, FL

NOTES:

[1] The background screening value is twice the average of detected concentrations for inorganic analytes.

[2] SCTL = Florida Department of Environmental Protection, Soil Cleanup Target Levels, Chapter 62-777 FAC, May 26, 1999.
Values indicated are for direct exposure scenario. Value for mercury is for inorganic mercury
Chromium values are for Chromium (IV).

[3] RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites (OSWER directive 9355-4-12). For essential nutrients (calcium, magnesium, potassium) screening values were derived based on recommended daily allowances (RDAs).
RBC for benzo(g,h,i)perylene and phenanthrene are not available, value is based on pyrene.

mg/kg = milligrams per kilogram.
ug/kg = micrograms per kilogram.

n = noncarcinogenic pathway
c = carcinogenic pathway

ND = Not determined.
NA = Not Analyzed.
bls = below land surface

OSWER = Office of Solid Waste and Emergency Response.
USEPA = U.S. Environmental Protection Agency.
FDEP = Florida Department of Environmental Protection

J = Reported concentration is an estimated quantity.
All inorganics results expressed in milligrams per kilogram (mg/kg) soil dry weight; organics in micrograms per kilogram (ug/kg) soil dry weight.
Bold/shaded values indicate exceedance of regulatory guidance and background.
Blank space indicates analyte/compound was not detected at the reporting limit.

TABLE B-3

SUMMARY OF POSITIVE DETECTIONS IN GROUNDWATER

Appendix B

Table B-3. Summary of Positive Detections in Groundwater Analytical Results

Study Area 42

Naval Training Center, Orlando
Orlando, FL

Well ID						OLD-42-01				OLD-42-02				OLD-42-03			
Identifier	Background Screening [1]	FDEP GCTL [2]		Primary FEDMCL [3]	RBC [4] for Tap Water	42G00101		42H00101		42G00201		42H00201		42G00301		42H00301	
Sampling Date						6-Nov-97		6-Nov-97		6-Nov-97		6-Nov-97		6-Nov-97		6-Nov-97	
Depth bis (ft)						6-16		6-16		6-16		6-16		6-16		6-16	
Volatile Organics, ug/L																	
Styrene		100	p	100	1600 n			NA		0.7	J	NA				NA	
Semivolatile organics, ug/L																	
Naphthalene		20	c	ND	1500 n			NA				NA		0.3	J	NA	
Pesticides/PCBs, ug/L																	
Endosulfan I		42	p	ND	220 n			NA		0.01	J	NA				NA	
Heptachlor		0.4	p	0.4	0.0023 c	0.12	J	NA		0.12	J	NA		0.12	J	NA	
Inorganics, ug/L																	
Aluminum	4,067	200	s	ND	37,000 n	489		193	B	1120		294		1200		86	B
Barium	31.4	2,000	p	2,000	2,600 n	9.9	B	8.1	B	19	B	10.4	B	9.1	B	4.4	B
Calcium	36,830	ND		ND	1,000,000	10900		10700		10000		10000		5950		5820	
Chromium	7.8	100	p	100	180 n					2	B			2.3	B		
Copper	5.4	1,000	s	1300	1,500 n							2.5	B				
Iron	1,227	300	s	ND	11,000 n	236		183		144		115		95.5	B	65.5	B
Lead	4	15	p	15	15	1.7	B										
Magnesium	4,560	ND		ND	118,807	599	B	587	B	363	B	370	B	544	B	537	B
Manganese	17	50	s	ND	840 n	13.9	B	13.4	B	15.5		15.5		3.8	B	4	B
Potassium	5,400	ND		ND	297,016	1440	B	1410	B	2180	B	2270	B	640	B	646	B
Sodium	18,222	160,000	p	ND	396,022	1820	B	2030	B	3230	B	3430	B	1930	B	2560	B
Vanadium	20.6	49	st	ND	260 n	2	B			2.7	B	2.6	B				
Zinc	4	5,000	s	ND	11,000 n	10.7	B	6.9	B	2.9	B	3.3	B	2.9	B	3.7	B

Notes for Summary of Positive Detections in Groundwater Analytical Results Study Area 42

Naval Training Center, Orlando
Orlando, FL

NOTES:

[1] The background screening value is twice the average of detected concentrations for inorganic analytes.
[2] FDEP GCTL = Florida Department of Environmental Protection, Groundwater Cleanup Target Levels, Chapter 62-777 FAC, May 26, 1999.
3 FEDMCL = Federal Maximum Contaminant Levels, Primary Drinking Water Regulations and Health Advisories, February 1996.

[4] RBC = Risk-Based Concentration Table, USEPA Region III, May 1996, R.L. Smith. RBC for chromium is based on chromium VI. RBC for lead is not available, value is treatment technology action limit for lead in drinking water distribution system identified in Drinking Water Standards and Health Advisories (USEPA, 1995). For essential nutrients (calcium, magnesium, potassium) screening values were derived based on recommended daily allowances (RDAs).

s = secondary standard
st = systemic toxicant
p = primary standard
o = organoleptic

mg/L = milligrams per liter.
µg/L = micrograms per liter.

n = noncarcinogenic effects
c = carcinogenic effects

ND = Not determined.
NA = Not Analyzed.
bls = below land surface

OSWER = Office of Solid Waste and Emergency Response.
USEPA = U.S. Environmental Protection Agency.
FDEP = Florida Department of Environmental Protection

J = Reported concentration is an estimated quantity.
B = Reported concentration is between the instrument detection limit and the contract required detection limit.
Bold/shaded values indicate exceedance of regulatory guidance and background.
Blank space indicates analyte/compound was not detected at the reporting limit.

APPENDIX C

SUMMARY OF ANALYTICAL RESULTS

TABLE C-1

SUMMARY OF ANALYTICAL RESULTS IN SURFACE SOIL

Appendix C
Table C-1. Summary of Surface Soil Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42S00101		42S00201		42S00201D		42S00301	
Lab ID	C7G100151026		C7G100151023		C7G100151024		C7G100151025	
Sampling Date	9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97	
Volatile organics, ug/kg								
1,1,1-Trichloroethane	11	U	10	U	10	U	11	U
1,1,2,2-Tetrachloroethane	11	U	10	U	10	U	11	U
1,1,2-Trichloroethane	11	U	10	U	10	UJ	11	U
1,1-Dichloroethane	11	U	10	U	10	U	11	U
1,1-Dichloroethene	11	U	10	U	10	U	11	U
1,2-Dichloroethane	11	U	10	U	10	U	11	U
1,2-Dichloroethene (total)	11	U	10	U	10	U	11	U
1,2-Dichloropropane	11	U	10	U	10	U	11	U
2-Butanone	11	UJ	10	UJ	10	UJ	11	UJ
2-Hexanone	11	UJ	10	UJ	10	UJ	11	UJ
4-Methyl-2-pentanone	11	U	10	U	10	U	11	U
Acetone	11	UJ	10	UJ	10	UJ	11	UJ
Benzene	11	U	10	U	10	U	11	U
Bromodichloromethane	11	U	10	U	10	U	11	U
Bromoform	11	U	10	U	10	UJ	11	U
Bromomethane	11	UJ	10	UJ	10	U	11	UJ
Carbon disulfide	11	UJ	10	UJ	10	UJ	11	UJ
Carbon tetrachloride	11	U	10	U	10	U	11	U
Chlorobenzene	11	U	10	U	10	U	11	U
Chloroethane	11	U	10	U	10	U	11	U
Chloroform	11	U	10	U	10	U	11	U
Chloromethane	11	UJ	10	UJ	10	UJ	11	UJ
cis-1,3-Dichloropropene	11	U	10	U	10	U	11	U
Dibromochloromethane	11	U	10	U	10	U	11	U
Ethylbenzene	11	U	10	U	10	U	11	U
Methylene chloride	11	U	10	UJ	10	UJ	11	U
Styrene	11	U	10	U	10	U	11	U
Tetrachloroethene	11	U	10	U	10	U	11	U
Toluene	11	U	10	U	10	U	11	U
trans-1,3-Dichloropropene	11	U	10	U	10	U	11	U
Trichloroethene	11	U	10	U	10	U	11	U
Vinyl chloride	11	UJ	10	UJ	10	U	11	UJ
Xylene (total)	11	U	10	U	10	U	11	U
Semivolatile organics, ug/kg								
1,2,4-Trichlorobenzene	380	U	340	U	340	U	350	U
1,2-Dichlorobenzene	380	U	340	U	340	U	350	U
1,3-Dichlorobenzene	380	U	340	U	340	U	350	U
1,4-Dichlorobenzene	380	U	340	U	340	U	350	U
2,2'-oxybis(1-Chloropropane)	380	U	340	U	340	U	350	U
2,4,5-Trichlorophenol	920	U	830	U	830	U	850	U
2,4,6-Trichlorophenol	380	U	340	U	340	U	350	U
2,4-Dichlorophenol	380	U	340	U	340	U	350	U
2,4-Dimethylphenol	380	U	340	U	340	U	350	U
2,4-Dinitrophenol	920	U	830	U	830	U	850	U
2,4-Dinitrotoluene	380	U	340	U	340	U	350	U
2,6-Dinitrotoluene	380	U	340	U	340	U	350	U
2-Chloronaphthalene	380	U	340	U	340	U	350	U
2-Chlorophenol	380	U	340	U	340	U	350	U
2-Methylnaphthalene	380	U	340	U	340	U	350	U
2-Methylphenol	380	U	340	U	340	U	350	U

Appendix C
Table C-1. Summary of Surface Soil Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42S00101		42S00201		42S00201D		42S00301	
Lab ID	C7G100151026		C7G100151023		C7G100151024		C7G100151025	
Sampling Date	9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97	
2-Nitroaniline	920	U	830	U	830	U	850	U
2-Nitrophenol	380	U	340	U	340	U	350	U
3,3'-Dichlorobenzidine	380	U	340	U	340	U	350	U
3-Nitroaniline	920	U	830	U	830	U	850	U
4,6-Dinitro-2-methylphenol	920	U	830	U	830	U	850	U
4-Bromophenyl-phenylether	380	U	340	U	340	U	350	U
4-Chloro-3-methylphenol	380	U	340	U	340	U	350	U
4-Chloroaniline	380	U	340	U	340	U	350	U
4-Chlorophenyl-phenylether	380	U	340	U	340	U	350	U
4-Methylphenol	380	U	340	U	340	U	350	U
4-Nitroaniline	920	U	830	U	830	U	850	U
4-Nitrophenol	920	U	830	U	830	U	850	U
Acenaphthene	380	U	340	U	340	U	350	U
Acenaphthylene	220	J	91	J	85	J	350	U
Anthracene	69	J	340	U	340	U	350	U
Benzo(a)anthracene	160	J	39	J	70	J	350	U
Benzo(a)pyrene	300	J	140	J	130	J	350	U
Benzo(b)fluoranthene	430		260	J	230	J	350	U
Benzo(g,h,i)perylene	59	J	35	J	340	UJ	350	U
Benzo(k)fluoranthene	390		170	J	170	J	350	U
bis(2-Chloroethoxy)methane	380	U	340	U	340	U	350	U
bis(2-Chloroethyl)ether	380	U	340	U	340	U	350	U
bis(2-Ethylhexyl)phthalate	380	U	340	U	340	UJ	350	U
Butylbenzylphthalate	380	U	340	U	340	U	350	U
Carbazole	380	U	340	U	340	U	350	U
Chrysene	440		150	J	200	J	350	U
Di-n-butylphthalate	380	U	340	U	340	U	350	U
Di-n-octylphthalate	380	U	340	U	340	U	350	U
Dibenz(a,h)anthracene	380	U	340	U	340	U	350	U
Dibenzofuran	380	U	340	U	340	U	350	U
Diethylphthalate	380	U	340	U	340	U	350	U
Dimethylphthalate	380	U	340	U	340	U	350	U
Fluoranthene	570		220	J	200	J	350	U
Fluorene	380	U	340	U	340	U	350	U
Hexachlorobenzene	380	U	340	U	340	U	350	U
Hexachlorobutadiene	380	U	340	U	340	U	350	U
Hexachlorocyclopentadiene	380	U	340	U	340	U	350	U
Hexachloroethane	380	U	340	U	340	U	350	U
Indeno(1,2,3-cd)pyrene	84	J	49	J	46	J	350	U
Isophorone	380	U	340	U	340	U	350	U
N-Nitroso-di-n-propylamine	380	U	340	U	340	U	350	U
N-Nitrosodiphenylamine	380	U	340	U	340	U	350	U
Naphthalene	380	U	340	U	340	U	350	U
Nitrobenzene	380	U	340	U	340	U	350	U
Pentachlorophenol	920	U	830	U	830	U	850	U
Phenanthrene	220	J	51	J	46	J	350	U
Phenol	380	U	340	U	340	U	350	U
Pyrene	460		110	J	150	J	350	U
Inorganics, mg/kg								
Aluminum	1020		1570		1650		1480	
Antimony	3.2	U	2.9	U	2.9	U	3	U

Appendix C
Table C-1. Summary of Surface Soil Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42S00101		42S00201		42S00201D		42S00301	
Lab ID	C7G100151026		C7G100151023		C7G100151024		C7G100151025	
Sampling Date	9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97	
Arsenic	1.2	J	1.5	J	1	J	0.49	U
Barium	15	J	10.5	J	10.6	J	3.2	J
Beryllium	0.07	U	0.05	U	0.06	U	0.06	B
Cadmium	0.59	U	0.94	J	1.5		0.55	U
Calcium	2140		2430		2730		2690	
Chromium	2.6		3.9		4.2		1.8	J
Cobalt	0.72	U	0.65	U	0.65	U	0.66	U
Copper	6.9		24.8		21.1		0.91	J
Iron	548		674		618		483	
Lead	125		191		172		12	
Magnesium	86.2	J	97.1	J	112	J	81	J
Manganese	19.5		16.2		15.8		4.7	
Mercury	0.23	J	0.1	UJ	0.1	UJ	0.11	UJ
Nickel	1.9	U	1.8	U	1.8	U	1.8	U
Potassium	74.1	U	97.2	J	133	J	80.6	J
Selenium	0.82	J	0.62	U	0.63	U	0.64	U
Silver	0.55	U	0.5	U	0.5	U	0.51	U
Sodium	108	U	51.1	U	49	U	27.9	U
Thallium	0.7	U	0.75	U	0.79	U	0.58	U
Vanadium	2.2	J	1.6	J	1.8	J	1.2	J
Zinc	107		73.2		75.4		5.6	U
General Chemistry, mg/kg								
TRPH	260		100	U	NA		110	U

Appendix C
Table C-1a. Summary of Surface Soil Analytical Results
Supplemental Sampling - Polyaromatic Hydrocarbons
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42S00401		42S00401D		42S00501		42S00601		42S00701		42S00801		42S00901		42S01001	
Lab ID	270142001		270142002		270142003		270142004		270142005		270142006		270142007		270142008	
Sampling Date	26-Feb-98		26-Feb-98		26-Feb-98		26-Feb-98		26-Feb-98		26-Feb-98		26-Feb-98		26-Feb-98	
Polyaromatic Hydrocarbons, ug/kg																
1-Methylnaphthalene	380	U	390	U	370	U	180	U	180	U	720	U	700	U	380	U
2-Methylnaphthalene	380	U	390	U	370	U	180	U	180	U	720	U	700	U	380	U
Acenaphthene	380	U	390	U	370	U	180	U	180	U	720	U	700	U	380	U
Acenaphthylene	380	U	390	U	370	U	180	U	180	U	720	U	700	U	380	U
Anthracene	380	U	390	U	370	U	180	U	180	U	720	U	700	U	380	U
Benzo(a)anthracene	38	U	38	U	36	U	18	U	17	U	71	U	70	U	38	U
Benzo(a)pyrene	67		65		36	U	18	U	17	U	100		70	U	38	U
Benzo(b)fluoranthene	77		76		36	U	18	U	17	U	120		70	U	38	U
Benzo(g,h,i)perylene	81		82		36	U	18	U	17	U	130		70	U	38	U
Benzo(k)fluoranthene	35		30		19	U	9	U	9	U	50		36	U	20	U
Chrysene	63		62		36	U	18	U	17	U	110		70	U	38	U
Dibenz(a,h)anthracene	38	U	38	U	36	U	18	U	17	U	71	U	70	U	38	U
Fluoranthene	83		110		36	U	18	U	17	U	71	U	70	U	38	U
Fluorene	380	U	390	U	370	U	180	U	180	U	720	U	700	U	380	U
Indeno(1,2,3-cd)pyrene	38	U	38	U	36	U	18	U	17	U	99		70	U	38	U
Naphthalene	380	U	390	U	370	U	180	U	180	U	720	U	700	U	380	U
Phenanthrene	380	U	390	U	370	U	180	U	180	U	720	U	700	U	380	U
Pyrene	89		89		36	U	18	U	17	U	130		70	U	38	U

Notes for Summary of Analytical Results Tables
Study Area 42

Naval Training Center, Orlando
Orlando Florida

NA = Identified parameter not analyzed.
Sample ID = Sample Identifier
Lab ID = Laboratory identifier

Units:

mg/kg milligram per kilogram
ug/kg microgram per kilogram
mg/L milligram per liter
ug/L microgram per liter

The following standard analytical data qualifiers have the following definitions:

U The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit
The number preceding the U qualifier is the reported sample quantitation limit.

J The analyte/compound was positively identified and the associated numerical value is an estimated concentration of the analyte/compound in the sample.

UJ The analyte/compound was not detected above the reported sample quantitation limit.
The reported quantitation limit, however, is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte/compound in the sample.

R The sample results are rejected during data validation because of serious deficiencies in meeting quality control criteria.

B Reported concentration is between the instrument detection limit (IDL) and the contract required detection limit (CRDL).
The "B" qualifier is typically changed to a "J" (estimated) qualifier following data validation, which is currently pending for groundwater analytical results.

TABLE C-2

SUMMARY OF ANALYTICAL RESULTS IN SUBSURFACE SOIL

Appendix C
Table C-2. Summary of Subsurface Soil Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42B00101		42B00201		42B00202		42B00301		42B00401		42B00402	
Lab ID	C7G100151032		C7G100151028		C7G100151029		C7G100151027		C7G100151030		C7G100151031	
Sampling Date	9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97	
Volatile organics, ug/kg												
1,1,1-Trichloroethane	12	U	11	U	11	U	11	U	11	U	11	U
1,1,2,2-Tetrachloroethane	12	U	11	U	11	U	11	U	11	U	11	U
1,1,2-Trichloroethane	12	U	11	U	11	U	11	U	11	U	11	U
1,1-Dichloroethane	12	U	11	U	11	U	11	U	11	U	11	U
1,1-Dichloroethene	12	U	11	U	11	U	11	U	11	U	11	U
1,2-Dichloroethane	12	U	11	U	11	U	11	U	11	U	11	U
1,2-Dichloroethene (total)	12	U	11	U	11	U	11	U	11	U	11	U
1,2-Dichloropropane	12	U	11	U	11	U	11	U	11	U	11	U
2-Butanone	12	UJ	11	U	11	UJ	11	UJ	11	UJ	11	UJ
2-Hexanone	12	UJ	11	UJ	11	UJ	11	UJ	11	UJ	11	UJ
4-Methyl-2-pentanone	12	U	11	U	11	U	11	U	11	U	11	U
Acetone	12	UJ	11	UJ	11	UJ	11	UJ	11	UJ	11	UJ
Benzene	12	U	11	U	11	U	11	U	11	U	11	U
Bromodichloromethane	12	U	11	U	11	U	11	U	11	U	11	U
Bromoform	12	U	11	U	11	U	11	U	11	U	11	U
Bromomethane	12	UJ	11	UJ	11	UJ	11	UJ	11	UJ	11	UJ
Carbon disulfide	12	UJ	11	UJ	11	UJ	11	UJ	11	UJ	11	UJ
Carbon tetrachloride	12	U	11	U	11	U	11	U	11	U	11	U
Chlorobenzene	12	U	11	U	11	U	11	U	11	U	11	U
Chloroethane	12	U	11	U	11	U	11	U	11	U	11	U
Chloroform	12	U	11	U	11	U	11	U	11	U	11	U
Chloromethane	12	UJ	11	UJ	11	UJ	11	UJ	11	UJ	11	UJ
cis-1,3-Dichloropropene	12	U	11	U	11	U	11	U	11	U	11	U
Dibromochloromethane	12	U	11	U	11	U	11	U	11	U	11	U
Ethylbenzene	12	U	11	U	11	U	11	U	11	U	11	U
Methylene chloride	12	U	11	U	11	U	11	U	11	U	11	U
Styrene	12	U	11	U	11	U	11	U	11	U	11	U
Tetrachloroethene	12	U	11	U	11	U	11	U	11	U	11	U
Toluene	12	U	11	U	11	U	11	U	11	U	11	U
trans-1,3-Dichloropropene	12	U	11	U	11	U	11	U	11	U	11	U
Trichloroethene	12	U	11	U	11	U	11	U	11	U	11	U
Vinyl chloride	12	UJ	11	UJ	11	UJ	11	UJ	11	UJ	11	UJ
Xylene (total)	12	U	11	U	11	U	11	U	11	U	11	U
Semivolatile organics, ug/kg												
1,2,4-Trichlorobenzene	410	U	350	R	350	U	350	U	350	U	360	U
1,2-Dichlorobenzene	410	U	350	R	350	U	350	U	350	U	360	U
1,3-Dichlorobenzene	410	U	350	R	350	U	350	U	350	U	360	U
1,4-Dichlorobenzene	410	U	350	R	350	U	350	U	350	U	360	U
2,2'-oxybis(1-Chloropropane)	410	U	350	R	350	U	350	U	350	U	360	U
2,4,5-Trichlorophenol	1000	U	840	U	840	U	850	U	850	U	870	U
2,4,6-Trichlorophenol	410	U	350	U	350	U	350	U	350	U	360	U
2,4-Dichlorophenol	410	U	350	U	350	U	350	U	350	U	360	U
2,4-Dimethylphenol	410	U	350	U	350	U	350	U	350	U	360	U
2,4-Dinitrophenol	1000	U	840	U	840	U	850	U	850	U	870	U
2,4-Dinitrotoluene	410	U	350	R	350	U	350	U	350	U	360	U
2,6-Dinitrotoluene	410	U	230	J	350	U	350	U	350	U	360	U
2-Chloronaphthalene	410	U	350	R	350	U	350	U	350	U	360	U
2-Chlorophenol	410	U	350	U	350	U	350	U	350	U	360	U
2-Methylnaphthalene	410	U	350	R	350	U	350	U	350	U	360	U
2-Methylphenol	410	U	350	U	350	U	350	U	350	U	360	U

Appendix C
Table C-2. Summary of Subsurface Soil Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42B00101		42B00201		42B00202		42B00301		42B00401		42B00402	
Lab ID	C7G100151032		C7G100151028		C7G100151029		C7G100151027		C7G100151030		C7G100151031	
Sampling Date	9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97	
2-Nitroaniline	1000	U	840	R	840	U	850	U	850	U	870	U
2-Nitrophenol	410	U	350	U	350	U	350	U	350	U	360	U
3,3'-Dichlorobenzidine	410	U	350	R	350	U	350	U	350	U	360	U
3-Nitroaniline	1000	U	840	R	840	U	850	U	850	U	870	U
4,6-Dinitro-2-methylphenol	1000	U	840	U	840	U	850	U	850	U	870	U
4-Bromophenyl-phenylether	410	U	350	R	350	U	350	U	350	U	360	U
4-Chloro-3-methylphenol	410	U	350	U	350	U	350	U	350	U	360	U
4-Chloroaniline	410	U	350	R	350	U	350	U	350	U	360	U
4-Chlorophenyl-phenylether	410	U	350	R	350	U	350	U	350	U	360	U
4-Methylphenol	410	U	350	U	350	U	350	U	350	U	360	U
4-Nitroaniline	1000	U	840	R	840	U	850	U	850	U	870	U
4-Nitrophenol	1000	U	840	U	840	U	850	U	850	U	870	U
Acenaphthene	410	U	350	R	350	U	350	U	350	U	360	U
Acenaphthylene	410	U	350	R	350	U	350	U	350	U	360	U
Anthracene	410	U	350	R	350	U	350	U	350	U	360	U
Benzo(a)anthracene	410	U	350	R	350	U	350	U	350	U	360	U
Benzo(a)pyrene	410	U	350	R	350	U	350	U	350	U	360	U
Benzo(b)fluoranthene	410	U	350	R	350	U	350	U	350	U	360	U
Benzo(g,h,i)perylene	410	U	350	R	350	U	350	U	350	U	360	U
Benzo(k)fluoranthene	410	U	350	R	350	U	350	U	350	U	360	U
bis(2-Chloroethoxy)methane	410	U	350	R	350	U	350	U	350	U	360	U
bis(2-Chloroethyl)ether	410	U	350	R	350	U	350	U	350	U	360	U
bis(2-Ethylhexyl)phthalate	410	U	350	R	350	U	350	U	350	U	360	U
Butylbenzylphthalate	410	U	350	R	350	U	350	U	350	U	360	U
Carbazole	410	U	350	R	350	U	350	U	350	U	360	U
Chrysene	410	U	350	R	350	U	350	U	350	U	360	U
Di-n-butylphthalate	410	U	350	R	350	U	350	U	350	U	360	U
Di-n-octylphthalate	410	U	350	R	350	U	350	U	350	U	360	U
Dibenz(a,h)anthracene	410	U	350	R	350	U	350	U	350	U	360	U
Dibenzofuran	410	U	350	R	350	U	350	U	350	U	360	U
Diethylphthalate	410	U	350	R	350	U	350	U	350	U	360	U
Dimethylphthalate	410	U	350	R	350	U	350	U	350	U	360	U
Fluoranthene	410	U	350	R	350	U	350	U	350	U	360	U
Fluorene	410	U	350	R	350	U	350	U	350	U	360	U
Hexachlorobenzene	410	U	350	R	350	U	350	U	350	U	360	U
Hexachlorobutadiene	410	U	350	R	350	U	350	U	350	U	360	U
Hexachlorocyclopentadiene	410	U	350	R	350	U	350	U	350	U	360	U
Hexachloroethane	410	U	350	R	350	U	350	U	350	U	360	U
Indeno(1,2,3-cd)pyrene	410	U	350	R	350	U	350	U	350	U	360	U
Isophorone	410	U	350	R	350	U	350	U	350	U	360	U
N-Nitroso-di-n-propylamine	410	U	350	R	350	U	350	U	350	U	360	U
N-Nitrosodiphenylamine	410	U	350	R	350	U	350	U	350	U	360	U
Naphthalene	410	U	350	R	350	U	350	U	350	U	360	U
Nitrobenzene	410	U	350	R	350	U	350	U	350	U	360	U
Pentachlorophenol	1000	U	840	U	840	U	850	U	850	U	870	U
Phenanthrene	410	U	350	R	350	U	350	U	350	U	360	U
Phenol	410	U	350	U	350	U	350	U	350	U	360	U
Pyrene	410	U	350	R	350	U	350	U	350	U	360	U
Pesticides/PCBs, ug/kg												
4,4'-DDD	4.1	U	3.4	U	3.5	U	3.5	U	3.5	U	3.6	U
4,4'-DDE	4.1	U	3.4	U	3.5	U	3.5	U	3.5	U	3.6	U

Appendix C
Table C-2. Summary of Subsurface Soil Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42B00101		42B00201		42B00202		42B00301		42B00401		42B00402	
Lab ID	C7G100151032		C7G100151028		C7G100151029		C7G100151027		C7G100151030		C7G100151031	
Sampling Date	9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97		9-Jul-97	
4,4'-DDT	4.1	U	3.4	U	3.5	U	3.5	U	3.5	U	3.6	U
Aldrin	2.1	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
alpha-BHC	2.1	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
alpha-Chlordane	2.1	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
Aroclor-1016	41	U	34	U	35	U	35	U	35	U	36	U
Aroclor-1221	84	U	70	U	71	U	71	U	71	U	73	U
Aroclor-1232	41	U	34	U	35	U	35	U	35	U	36	U
Aroclor-1242	41	U	34	U	35	U	35	U	35	U	36	U
Aroclor-1248	41	U	34	U	35	U	35	U	35	U	36	U
Aroclor-1254	41	U	34	U	35	U	35	U	35	U	36	U
Aroclor-1260	41	U	34	U	35	U	35	U	35	U	36	U
beta-BHC	2.1	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
delta-BHC	2.1	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ	1.8	UJ
Dieldrin	4.1	U	3.4	U	3.5	U	3.5	U	3.5	U	3.6	U
Endosulfan I	2.1	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
Endosulfan II	4.1	U	3.4	U	3.5	U	3.5	U	3.5	U	3.6	U
Endosulfan sulfate	4.1	U	3.4	U	3.5	U	3.5	U	3.5	U	3.6	U
Endrin	4.1	U	3.4	U	3.5	U	3.5	U	3.5	U	3.6	U
Endrin aldehyde	4.1	U	3.4	U	3.5	U	3.5	U	3.5	U	3.6	U
Endrin ketone	4.1	U	3.4	U	3.5	U	3.5	U	3.5	U	3.6	U
gamma-BHC (Lindane)	2.1	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
gamma-Chlordane	2.1	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
Heptachlor	2.1	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
Heptachlor epoxide	2.1	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
Methoxychlor	21	U	18	U	18	U	18	U	18	U	18	U
Toxaphene	210	U	180	U	180	U	180	U	180	U	180	U
Inorganics, mg/kg												
Aluminum	12100		549		245		1330		614		696	
Antimony	3.5	U	2.9	U	3	U	3	U	3	U	3.1	U
Arsenic	0.64	J	0.48	U	0.49	U	0.49	U	0.49	U	0.5	U
Barium	1.5	J	1.8	J	0.63	J	2.1	J	1.6	J	1.6	J
Beryllium	0.15	U	0.05	U	0.03	U	0.03	U	0.03	U	0.05	U
Cadmium	0.65	U	0.54	U	0.54	U	0.55	U	0.55	U	0.56	U
Calcium	350	J	358	J	71.1	U	8620		225	U	285	U
Chromium	10.6		1.2	J	0.62	J	2	J	1.4	J	1.5	J
Cobalt	0.78	U	0.65	U	0.66	U	0.66	U	0.66	U	0.68	U
Copper	0.6	J	0.44	J	0.31	U	0.41	J	0.36	J	0.32	U
Iron	495		129		43.3		320		196		421	
Lead	7.4		2.2		0.75		2.1		1.6		1.8	
Magnesium	10.8	U	21.7	U	7.7	U	123	J	18.6	U	20.5	U
Manganese	0.64	J	0.98	J	0.55	J	1.9	J	0.83	J	0.92	J
Mercury	0.13	UJ	0.1	UJ	0.11	UJ	0.11	UJ	0.11	UJ	0.11	UJ
Nickel	2.1	U	1.8	U	1.8	U	1.8	U	1.8	U	1.8	U
Potassium	137	J	115	J	68	U	68.4	U	87.2	J	104	J
Selenium	0.82	J	0.68	J	0.63	U	0.63	U	0.63	U	0.65	U
Silver	0.6	U	0.65	U	0.5	U	0.51	U	0.51	U	0.52	U
Sodium	42.6	U	30.1	U	23.9	U	27.1	U	26.8	U	31.7	U
Thallium	0.69	U	0.57	U	0.57	U	0.58	U	0.58	U	0.59	U
Vanadium	3.1	J	0.33	U	0.34	U	1.3	J	0.44	J	1.2	J
Zinc	5.4	U	3	U	2.6	U	2.2	U	3.2	U	3.3	U
General Chemistry, mg/kg												

Appendix C
Table C-2. Summary of Subsurface Soil Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42B00101	42B00201	42B00202	42B00301	42B00401	42B00402
Lab ID	C7G100151032	C7G100151028	C7G100151029	C7G100151027	C7G100151030	C7G100151031
Sampling Date	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97	9-Jul-97
TRPH	130 U	100 U	110 U	110 U	110 U	110 U

Notes for Summary of Analytical Results Tables
Study Area 42

Naval Training Center, Orlando
Orlando Florida

NA = Identified parameter not analyzed.
Sample ID = Sample Identifier
Lab ID = Laboratory identifier

Units:

mg/kg	milligram per kilogram
ug/kg	microgram per kilogram
mg/L	milligram per liter
ug/L	microgram per liter

The following standard analytical data qualifiers have the following definitions:

U	The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit The number preceding the U qualifier is the reported sample quantitation limit.
J	The analyte/compound was positively identified and the associated numerical value is an estimated concentration of the analyte/compound in the sample.
UJ	The analyte/compound was not detected above the reported sample quantitation limit. The reported quantitation limit, however, is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte/compound in the sample.
R	The sample results are rejected during data validation because of serious deficiencies in meeting quality control criteria.
B	Reported concentration is between the instrument detection limit (IDL) and the contract required detection limit (CRDL). The "B" qualifier is typically changed to a "J" (estimated) qualifier following data validation, which is currently pending for groundwater analytical results.

TABLE C-3

SUMMARY OF ANALYTICAL RESULTS IN GROUNDWATER

Appendix C
Table C-3. Summary of Groundwater Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42G00101		42H00101		42G00201		42H00201		42G00301		42H00301	
LabID	S776329*1		S776329*4		S776329*2		S776329*5		S776329*3		S776329*6	
Sampling Date	6-Nov-97		6-Nov-97		6-Nov-97		6-Nov-97		6-Nov-97		6-Nov-97	
Volatile Organics, ug/L												
1,1,1-Trichloroethane	1	U	NA		1	U	NA		1	U	NA	
1,1,2,2-Tetrachloroethane	1	U	NA		1	U	NA		1	U	NA	
1,1,2-Trichloroethane	1	U	NA		1	U	NA		1	U	NA	
1,1-Dichloroethane	1	U	NA		1	U	NA		1	U	NA	
1,1-Dichloroethene	1	U	NA		1	U	NA		1	U	NA	
1,2-Dibromo-3-chloropropane	1	U	NA		1	U	NA		1	U	NA	
1,2-Dibromoethane (EDB)	1	U	NA		1	U	NA		1	U	NA	
1,2-Dichloroethane	1	U	NA		1	U	NA		1	U	NA	
1,2-Dichloropropane	1	U	NA		1	U	NA		1	U	NA	
2-Butanone	5	U	NA		5	U	NA		5	U	NA	
2-Hexanone	5	U	NA		5	U	NA		5	U	NA	
4-Methyl-2-pentanone	5	U	NA		5	U	NA		5	U	NA	
Acetone	5	U	NA		5	U	NA		5	U	NA	
Benzene	1	U	NA		1	U	NA		1	U	NA	
Bromochloromethane	1	U	NA		1	U	NA		1	U	NA	
Bromodichloromethane	1	U	NA		1	U	NA		1	U	NA	
Bromoform	1	U	NA		1	U	NA		1	U	NA	
Bromomethane	1	U	NA		1	U	NA		1	U	NA	
Carbon disulfide	1	U	NA		1	U	NA		1	U	NA	
Carbon tetrachloride	1	U	NA		1	U	NA		1	U	NA	
Chlorobenzene	1	U	NA		1	U	NA		1	U	NA	
Chlorodifluoromethane	1	U	NA		1	U	NA		1	U	NA	
Chloroethane	1	U	NA		1	U	NA		1	U	NA	
Chloroform	1	U	NA		1	U	NA		1	U	NA	
Chloromethane	1	U	NA		1	U	NA		1	U	NA	
cis-1,2-Dichloroethene	1	U	NA		1	U	NA		1	U	NA	
cis-1,3-Dichloropropene	1	U	NA		1	U	NA		1	U	NA	
Dibromochloromethane	1	U	NA		1	U	NA		1	U	NA	
Dichlorodifluoromethane	1	U	NA		1	U	NA		1	U	NA	
Ethylbenzene	1	U	NA		1	U	NA		1	U	NA	
Methylene chloride	2	U	NA		2	U	NA		2	U	NA	
Styrene	1	U	NA		0.7	J	NA		1	U	NA	
Tetrachloroethene	1	U	NA		1	U	NA		1	U	NA	
Toluene	1	U	NA		1	U	NA		1	U	NA	
trans-1,2-Dichloroethylene	1	U	NA		1	U	NA		1	U	NA	
trans-1,3-Dichloropropene	1	U	NA		1	U	NA		1	U	NA	
Trichloroethene	1	U	NA		1	U	NA		1	U	NA	
Trichlorofluoromethane	1	U	NA		1	U	NA		1	U	NA	
Vinyl chloride	1	U	NA		1	U	NA		1	U	NA	
Xylene (total)	1	U	NA		1	U	NA		1	U	NA	
Semivolatile organics, ug/L												
1,2,4-Trichlorobenzene	11	U	NA		11	U	NA		11	U	NA	
1,2-Dichlorobenzene	11	U	NA		11	U	NA		11	U	NA	
1,3-Dichlorobenzene	11	U	NA		11	U	NA		11	U	NA	
1,4-Dichlorobenzene	11	U	NA		11	U	NA		11	U	NA	
2,2'-oxybis(1-Chloropropane)	10	U	NA		10	U	NA		10	U	NA	
2,4,5-Trichlorophenol	25	U	NA		25	U	NA		25	U	NA	
2,4,6-Trichlorophenol	10	U	NA		10	U	NA		10	U	NA	
2,4-Dichlorophenol	10	U	NA		10	U	NA		10	U	NA	
2,4-Dimethylphenol	10	U	NA		10	U	NA		10	U	NA	

Appendix C
Table C-3. Summary of Groundwater Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42G00101		42H00101		42G00201		42H00201		42G00301		42H00301	
LabID	S776329*1		S776329*4		S776329*2		S776329*5		S776329*3		S776329*6	
2,4-Dinitrophenol	25	U	NA		25	U	NA		25	U	NA	
2,4-Dinitrotoluene	10	U	NA		10	U	NA		10	U	NA	
2,6-Dinitrotoluene	10	U	NA		10	U	NA		10	U	NA	
2-Chloronaphthalene	10	U	NA		10	U	NA		10	U	NA	
2-Chlorophenol	10	U	NA		10	U	NA		10	U	NA	
2-Methylnaphthalene	10	U	NA		10	U	NA		10	U	NA	
2-Methylphenol	10	U	NA		10	U	NA		10	U	NA	
2-Nitroaniline	25	U	NA		25	U	NA		25	U	NA	
2-Nitrophenol	10	U	NA		10	U	NA		10	U	NA	
3,3'-Dichlorobenzidine	10	U	NA		10	U	NA		10	U	NA	
3-Methylphenol/4-Methylphenol	10	U	NA		10	U	NA		10	U	NA	
3-Nitroaniline	25	U	NA		25	U	NA		25	U	NA	
4,6-Dinitro-2-methylphenol	25	U	NA		25	U	NA		25	U	NA	
4-Bromophenyl-phenylether	10	U	NA		10	U	NA		10	U	NA	
4-Chloro-3-methylphenol	10	U	NA		10	U	NA		10	U	NA	
4-Chloroaniline	10	U	NA		10	U	NA		10	U	NA	
4-Chlorophenyl-phenylether	10	U	NA		10	U	NA		10	U	NA	
4-Nitroaniline	25	U	NA		25	U	NA		25	U	NA	
4-Nitrophenol	25	U	NA		25	U	NA		25	U	NA	
Acenaphthene	10	U	NA		10	U	NA		10	U	NA	
Acenaphthylene	10	U	NA		10	U	NA		10	U	NA	
Anthracene	10	U	NA		10	U	NA		10	U	NA	
Benzo(a)anthracene	10	U	NA		10	U	NA		10	U	NA	
Benzo(a)pyrene	10	U	NA		10	U	NA		10	U	NA	
Benzo(b)fluoranthene	10	U	NA		10	U	NA		10	U	NA	
Benzo(g,h,i)perylene	10	U	NA		10	U	NA		10	U	NA	
Benzo(k)fluoranthene	10	U	NA		10	U	NA		10	U	NA	
bis(2-Chloroethoxy)methane	10	U	NA		10	U	NA		10	U	NA	
bis(2-Chloroethyl)ether	10	U	NA		10	U	NA		10	U	NA	
bis(2-Ethylhexyl)phthalate	10	U	NA		10	U	NA		10	U	NA	
Butylbenzylphthalate	10	U	NA		10	U	NA		10	U	NA	
Carbazole	10	U	NA		10	U	NA		10	U	NA	
Chrysene	10	U	NA		10	U	NA		10	U	NA	
Di-n-butylphthalate	10	U	NA		10	U	NA		10	U	NA	
Di-n-octylphthalate	10	U	NA		10	U	NA		10	U	NA	
Dibenz(a,h)anthracene	10	U	NA		10	U	NA		10	U	NA	
Dibenzofuran	10	U	NA		10	U	NA		10	U	NA	
Diethylphthalate	10	U	NA		10	U	NA		10	U	NA	
Dimethylphthalate	10	U	NA		10	U	NA		10	U	NA	
Fluoranthene	10	U	NA		10	U	NA		10	U	NA	
Fluorene	10	U	NA		10	U	NA		10	U	NA	
Hexachlorobenzene	10	U	NA		10	U	NA		10	U	NA	
Hexachlorobutadiene	10	U	NA		10	U	NA		10	U	NA	
Hexachlorocyclopentadiene	10	U	NA		10	U	NA		10	U	NA	
Hexachloroethane	10	U	NA		10	U	NA		10	U	NA	
Indeno(1,2,3-cd)pyrene	10	U	NA		10	U	NA		10	U	NA	
Isophorone	10	U	NA		10	U	NA		10	U	NA	
N-Nitroso-di-n-propylamine	10	U	NA		10	U	NA		10	U	NA	
N-Nitrosodiphenylamine	10	U	NA		10	U	NA		10	U	NA	
Naphthalene	10	U	NA		10	U	NA		0.3	J	NA	
Nitrobenzene	10	U	NA		10	U	NA		10	U	NA	
Pentachlorophenol	25	U	NA		25	U	NA		25	U	NA	

Appendix C
Table C-3. Summary of Groundwater Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42G00101		42H00101		42G00201		42H00201		42G00301		42H00301	
LabID	S776329*1		S776329*4		S776329*2		S776329*5		S776329*3		S776329*6	
Phenanthrene	10	U	NA		10	U	NA		10	U	NA	
Phenol	10	U	NA		10	U	NA		10	U	NA	
Pyrene	10	U	NA		10	U	NA		10	U	NA	
Pesticides/PCBs, ug/L												
4,4'-DDD	0.1	U	NA		0.1	U	NA		0.1	U	NA	
4,4'-DDE	0.1	U	NA		0.1	U	NA		0.1	U	NA	
4,4'-DDT	0.1	U	NA		0.1	U	NA		0.1	U	NA	
Aldrin	0.05	U	NA		0.05	U	NA		0.05	U	NA	
alpha-BHC	0.05	U	NA		0.05	U	NA		0.05	U	NA	
alpha-Chlordane	0.05	U	NA		0.05	U	NA		0.05	U	NA	
Aroclor-1016	1	U	NA		1	U	NA		1	U	NA	
Aroclor-1221	2	U	NA		2	U	NA		2	U	NA	
Aroclor-1232	1	U	NA		1	U	NA		1	U	NA	
Aroclor-1242	1	U	NA		1	U	NA		1	U	NA	
Aroclor-1248	1	U	NA		1	U	NA		1	U	NA	
Aroclor-1254	1	U	NA		1	U	NA		1	U	NA	
Aroclor-1260	1	U	NA		1	U	NA		1	U	NA	
beta-BHC	0.05	U	NA		0.05	U	NA		0.05	U	NA	
delta-BHC	0.05	U	NA		0.05	U	NA		0.05	U	NA	
Dieldrin	0.1	U	NA		0.1	U	NA		0.1	U	NA	
Endosulfan I	0.05	U	NA		0.01	J	NA		0.05	U	NA	
Endosulfan II	0.1	U	NA		0.1	U	NA		0.1	U	NA	
Endosulfan sulfate	0.1	U	NA		0.1	U	NA		0.1	U	NA	
Endrin	0.1	U	NA		0.1	U	NA		0.1	U	NA	
Endrin aldehyde	0.1	U	NA		0.1	U	NA		0.1	U	NA	
Endrin ketone	0.1	U	NA		0.1	U	NA		0.1	U	NA	
gamma-BHC (Lindane)	0.05	U	NA		0.05	U	NA		0.05	U	NA	
gamma-Chlordane	0.05	U	NA		0.05	U	NA		0.05	U	NA	
Heptachlor	0.12	J	NA		0.12	J	NA		0.05	U	NA	
Heptachlor epoxide	0.05	U	NA		0.05	U	NA		0.12	J	NA	
Methoxychlor	0.5	U	NA		0.5	U	NA		0.05	U	NA	
Toxaphene	5	U	NA		5	U	NA		5	U	NA	
Inorganics, ug/L												
Aluminum	489		193	B	1120		294		1200		86	B
Antimony	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U	3.3	U
Arsenic	3.6	U	3.6	U	3.6	U	3.6	U	3.6	U	3.6	U
Barium	9.9	B	8.1	B	19	B	10.4	B	9.1	B	4.4	B
Beryllium	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U	0.6	U
Calcium	10900		10700		10000		10000		5950		5820	
Chromium	2	U	2	U	2	B	2	U	2.3	B	2	U
Cobalt	1	U	1	U	1	U	1	U	1	U	1	U
Copper	2.2	U	2.2	U	2.2	U	2.5	B	2.2	U	2.2	U
Iron	236		183		144		115		95.5	B	65.5	B
Lead	1.7	B	1.2	U	1.2	U	1.2	U	1.2	U	1.2	U
Magnesium	599	B	587	B	363	B	370	B	544	B	537	B
Manganese	13.9	B	13.4	B	15.5		15.5		3.8	B	4	B
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
Nickel	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U	2.3	U
Potassium	1440	B	1410	B	2180	B	2270	B	640	B	646	B
Selenium	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U
Silver	3	U	3	U	3	U	3	U	3	U	3	U

Appendix C
Table C-3. Summary of Groundwater Analytical Results
Study Area 42

Naval Training Center, Orlando
Orlando, FL

Sample ID	42G00101		42H00101		42G00201		42H00201		42G00301		42H00301	
LabID	S776329*1		S776329*4		S776329*2		S776329*5		S776329*3		S776329*6	
Sodium	1820	B	2030	B	3230	B	3430	B	1930	B	2560	B
Thallium	4.7	U	4.7	U	4.7	U	4.7	U	4.7	U	4.7	U
Vanadium	2	B	1.7	U	2.7	B	2.6	B	1.7	U	1.7	U
Zinc	10.7	B	6.9	B	2.9	B	3.3	B	2.9	B	3.7	B
General Chemistry, mg/L												
Suspended Solids	5	U	NA		5	U	NA		5	U	NA	
TRPH	1	U	NA		1	U	NA		1	U	NA	

Notes for Summary of Analytical Results Tables
Study Area 42

Naval Training Center, Orlando
Orlando Florida

NA = Identified parameter not analyzed.
Sample ID = Sample Identifier
Lab ID = Laboratory identifier

Units:

mg/kg milligram per kilogram
ug/kg microgram per kilogram
mg/L milligram per liter
ug/L microgram per liter

The following standard analytical data qualifiers have the following definitions:

U The analyte/compound was analyzed for but was not detected above the reported sample quantitation limit
The number preceding the U qualifier is the reported sample quantitation limit.

J The analyte/compound was positively identified and the associated numerical value is an estimated concentration of the analyte/compound in the sample.

UJ The analyte/compound was not detected above the reported sample quantitation limit.
The reported quantitation limit, however, is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte/compound in the sample.

R The sample results are rejected during data validation because of serious deficiencies in meeting quality control criteria.

B Reported concentration is between the instrument detection limit (IDL) and the contract required detection limit (CRDL).
The "B" qualifier is typically changed to a "J" (estimated) qualifier following data validation, which is currently pending for groundwater analytical results.

APPENDIX D

INTERIM REMEDIAL ACTION FACTSHEET

Naval Training Center
Orlando, Florida
Proposed Interim Remedial Action
Study Area 42

This fact sheet was developed to inform interested citizens about the Naval Training Center (NTC), Orlando environmental program. Fact sheets will be distributed periodically to keep the community informed. Additional copies of these fact sheets can be obtained by calling the NTC, Orlando Public Affairs Office at (407) 646-4430.

Site Description

Study Area (SA) 42 is located on the Main Base of NTC, Orlando, south of Iwo Jima Street and west of Leahy Avenue (Figure 1). The site includes Building 2055, which was built in 1943, and used as classrooms and laboratories. Currently, the eastern half of the building is occupied by Morale, Welfare, and Recreation, and used for vending machine maintenance. The western half of the building contains the NTC air conditioning maintenance contractor mechanical shops, administrative offices, and storage rooms. Areas of environmental interest at the site include flammable storage lockers at the northwest and southeast corners of the building, an air conditioner condenser pad on the east end of the building where stained concrete was observed, and the concrete sumps on the north side of the building (Figure 2). Sinks in the laboratories may have been connected to the concrete sumps located on the north side of the buildings.

Site Investigations

Investigations at SA 42 included

- a site walkover,
- a review of historical documents,
- a review of aerial photographs, and
- soil and groundwater sampling.

Other than the stain on the air conditioner condenser pad, there were no indications of environmental releases or stressed vegetation around the perimeter of Building 2055.

Surface soil samples were collected at or near the following locations:

- the flammables storage locations,
- the stained concrete pad, and
- grassy areas around the site.

Subsurface soil and groundwater samples were taken from near the flammables storage locations and the concrete sumps.

Findings

Two of the surface soil samples had benzo (a) pyrene in amounts exceeding Florida guidelines for residential land use. The area of the base occupied by SA 42 is intended for a residential re-use scenario. Benzo (a) pyrene is fuel-

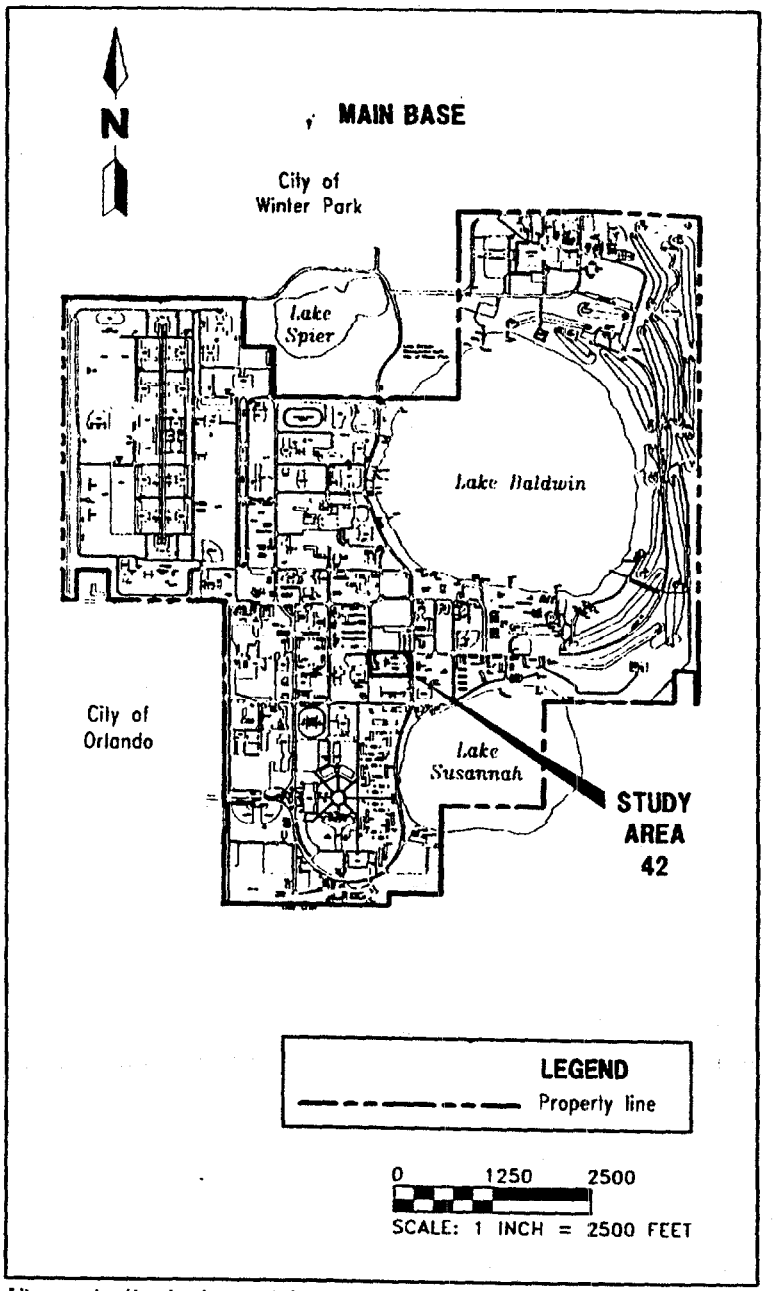


Figure 1. Study Area 42 Site Location Map

related and is often produced by incomplete burning of petroleum products. No contamination was detected in subsurface soil or groundwater.

Conclusions and Recommendations

The Navy, U.S. Environmental Protection Agency, and Florida Department of Environmental Protection have determined that an interim remedial action (IRA) is appropriate at SA 42 to protect human health. An IRA is an early cleanup of a specific portion of a site and can be performed before the whole site has been looked at. IRAs respond to environmental contamination of immediate concern and are sometimes the final action at a site. In this way, IRAs can help speed up the entire cleanup process.

What's Next?

Surface soil will be removed at the two locations that had benzo(a)pyrene in amounts exceeding Florida guidelines for residential land use. Each excavation will be approximately 10 feet in diameter and 1 foot deep. Samples will be collected from the walls or floor of each excavation to confirm that Florida guidelines for residential land use have been achieved. This approach is consistent with remedial actions at several other SAs that had minor exceedances of Florida guidelines for one or more compounds. Removal of soils from the indicated areas will allow unrestricted use and will not affect future plans of the City of Orlando.

Opportunities for Public Comment

The public is invited to submit any questions or comments on the remedial action described in this fact sheet. Written or verbal comments should be directed to the NTC, Orlando Public Works Office (see phone number listed below). A public comment period will be announced soon in the *Orlando Sentinel*.

For More Information...

If you have questions about the Navy's action at SA 42, or on the environmental program at NTC, Orlando in general, please contact Mr. Wayne Hansel at the NTC, Orlando Public Works Office, (407) 646-5294. Reports on the work at SA 42 can be reviewed at these locations:

Orange County Public Library
Orlando Branch (2nd floor)
101 East Central Boulevard, Orlando, Florida 32801
(407) 425-4694

NTC, Orlando Public Works Department
1350 Grace Hopper Avenue, Orlando, Florida 32813
(407) 646-4735

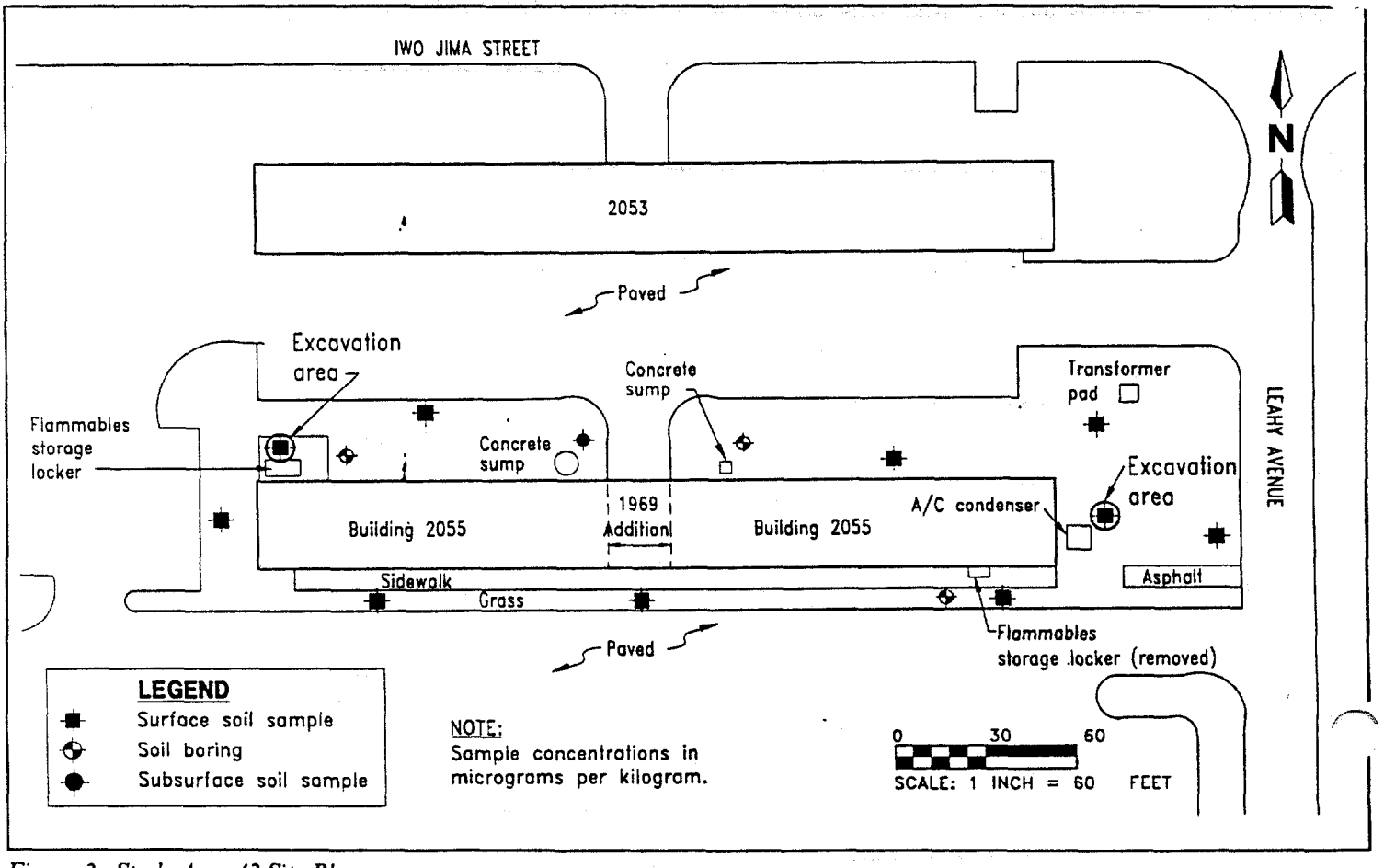


Figure 2. Study Area 42 Site Plan.

APPENDIX E

COMPLETION REPORT
INTERIM REMEDIAL ACTION
STUDY AREA 42, NTC ORLANDO

STUDY AREA 42

STUDY AREA 42

1. INTRODUCTION

1.1 STUDY AREA 42

SA 42 is located south of Iwo Jima Street and west Leahy Avenue on the Main Base, Naval Training Center, Orlando (Figure 1). The SA includes several buildings their associated grounds. PAH's were detected in north of Building 2056 and east of Building 2055 (figure 2).

1.2 SA 42 INTERIM REMEDIAL ACTION

SOUTHDIV tasked the DET to perform an IRA for this site. The objective of the IRA was to excavate and dispose of soil contaminated with PAHs. The excavation was to continue until the sampling program indicated with reasonable confidence that the concentrations of contaminants at the site were less than residential limits specified by FDEP SCG, dated 30 April 1998 or USEPA Region III, dated 01 October 1998, whichever specifies the stricter criteria.

1.2.1 SA 42 Interim Remedial Action Execution Summary

The execution of this IRA consisted of excavating an area approximately 12′ x 10′ to a depth of 1′ at sample location 42S001 (Figure 3) and an area approximately 10′ x 10′ to a depth of 1′ at sample location 42S002 (Figure 4). Soil removed from the site was characterized as non-hazardous and was sent to a treatment facility for incineration. A Confirmation sample was collected from each sidewall upon completion of the excavation and tested for PAHs. The results of these samples were all less than the RGOs except for the sample 2′ north of Building 2056 (sample 99SPORT0161-7) as shown in Figure 3. The OPT was informed that sample 99SPORT0161-7 had a result of 0.456 parts per million of Benzo(a)pyrene. The OPT instructed the DET to excavate up to Building 2056 and to take an additional informational sample. The DET excavated an additional 2′ x 10′ to a depth of 1′and collected sample 99SPORT0191-1 as shown in Figure 3. The results of this sample were less than the RGOs.

2.0 INTERIM REMEDIAL ACTION EXCECUTION

2.1 ACTIONS PERFORMED BY THE INTERIM REMEDIAL ACTION WORK PLAN

Actions performed are listed below.

- Collection of waste characterization samples
- Excavation and disposal of an area approximately 10′ x 10′ x 1′ and an area 12′ x 10′ x 1′
- Collection of confirmatory samples from each sidewall for analysis of PAHs
- Restoration of site by backfilling, grading to surrounding area, and seeding

2.2 OBSERVATIONS NOTES

2.2.1 Soil Conditions

From ground surface to the bottom of the excavation the soil was dark silty sand.

2.3 PLAN MODIFICATIONS AND JUSTIFICATION

Not relevant to Study Area 42.
RP Allen
11/19/99

~~Informed the OPT that sample SA35SA11 located along the north side of Building 2079 had a result of 6.4 parts per million of arsenic. The OPT instructed the DET not to excavate under Building 2079.~~ Informed the OPT that sample 99SPORT0161-7 had a result of 0.456 parts per million of Benzo(a)pyrene. The OPT instructed the DET to excavate up to Building 2056 and to take an additional informational sample. The DET excavated an additional 2′ x 10′ to a depth of 1′. Sample 99SPORT0191-1 is provided as the informational sample (Appendix G2).

3.0 INTERIM REMEDIAL ACTION OUTCOME

3.1 SITE CONDITIONS FOLLOWING COMPLETION OF WORK

Following completion of work, the DET had removed 11 tons of PAH contaminated soil. The site was backfilled, graded to surrounding area and seeded. Site photographs are included in Appendix G1.

4.0 SAMPLING

4.1 CONFIRMATION SAMPLING

Upon completion of work a confirmation sample was taken on each sidewall and tested for PAHs (Figures 3 & 4). See appendix G2 for sampling documentation.

4.2 WASTE CHARACTERIZATION SAMPLING

Waste characterization samples SA-42001 & SA-42002 were taken and analyzed for TCLP metals. See appendix G2 for sampling documentation.

5.0 WASTE GENERATION

5.1 Non-Hazardous Waste

A total of 11 tons of non-hazardous PAH contaminated soil was disposed of to a permitted treatment, storage and disposal facility. Waste Manifests are in appendix G3.

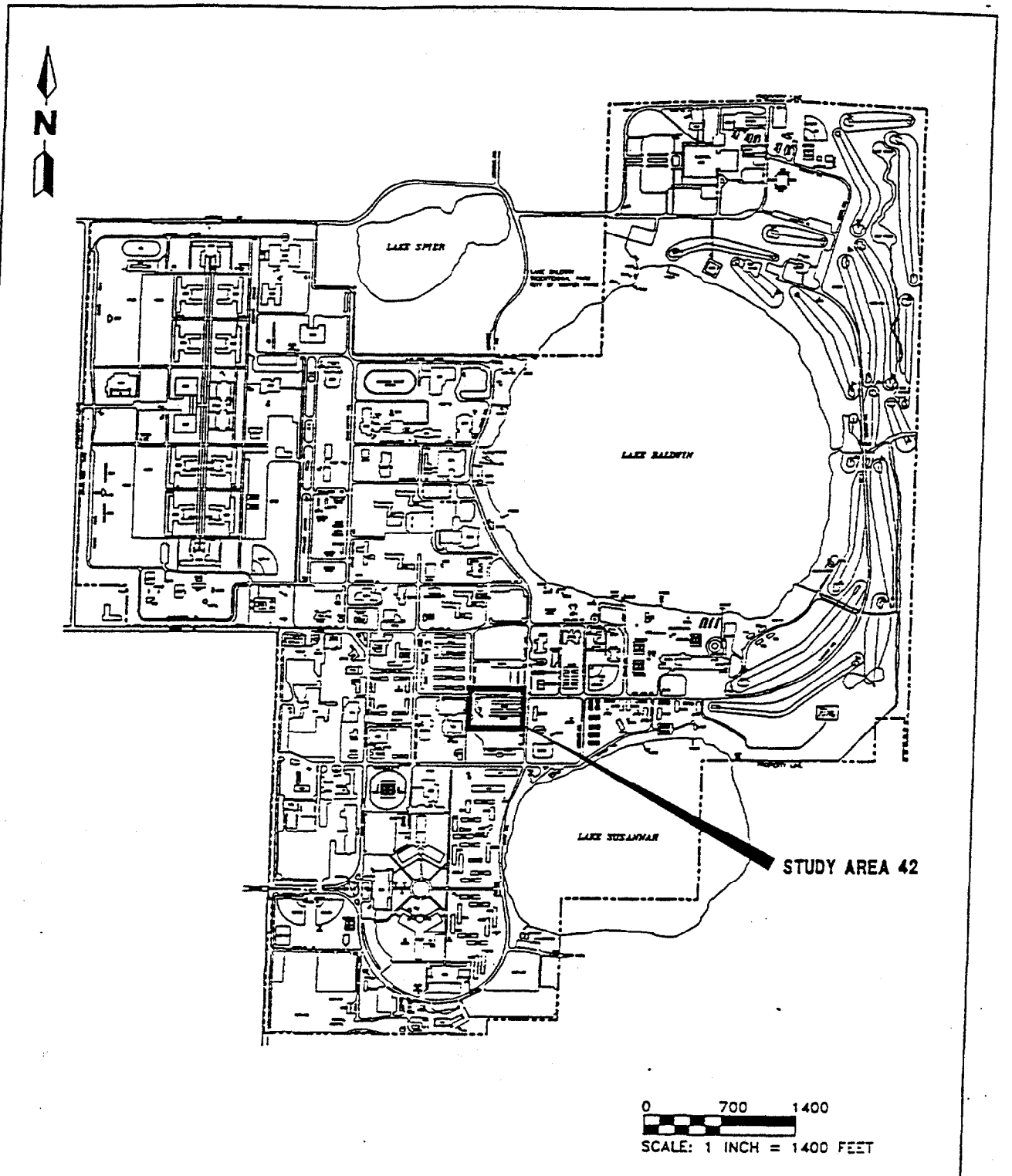


FIGURE 1
LOCATION OF STUDY AREA 42

K:\025301\02530-09\SSR\02530532.DWG, MAW-HP 05/28/98 13:27:51, AutoCAD R14

BASE REALIGNMENT AND CLOSURE
ENVIRONMENTAL SITE SCREENING
REPORT, STUDY AREA 42

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

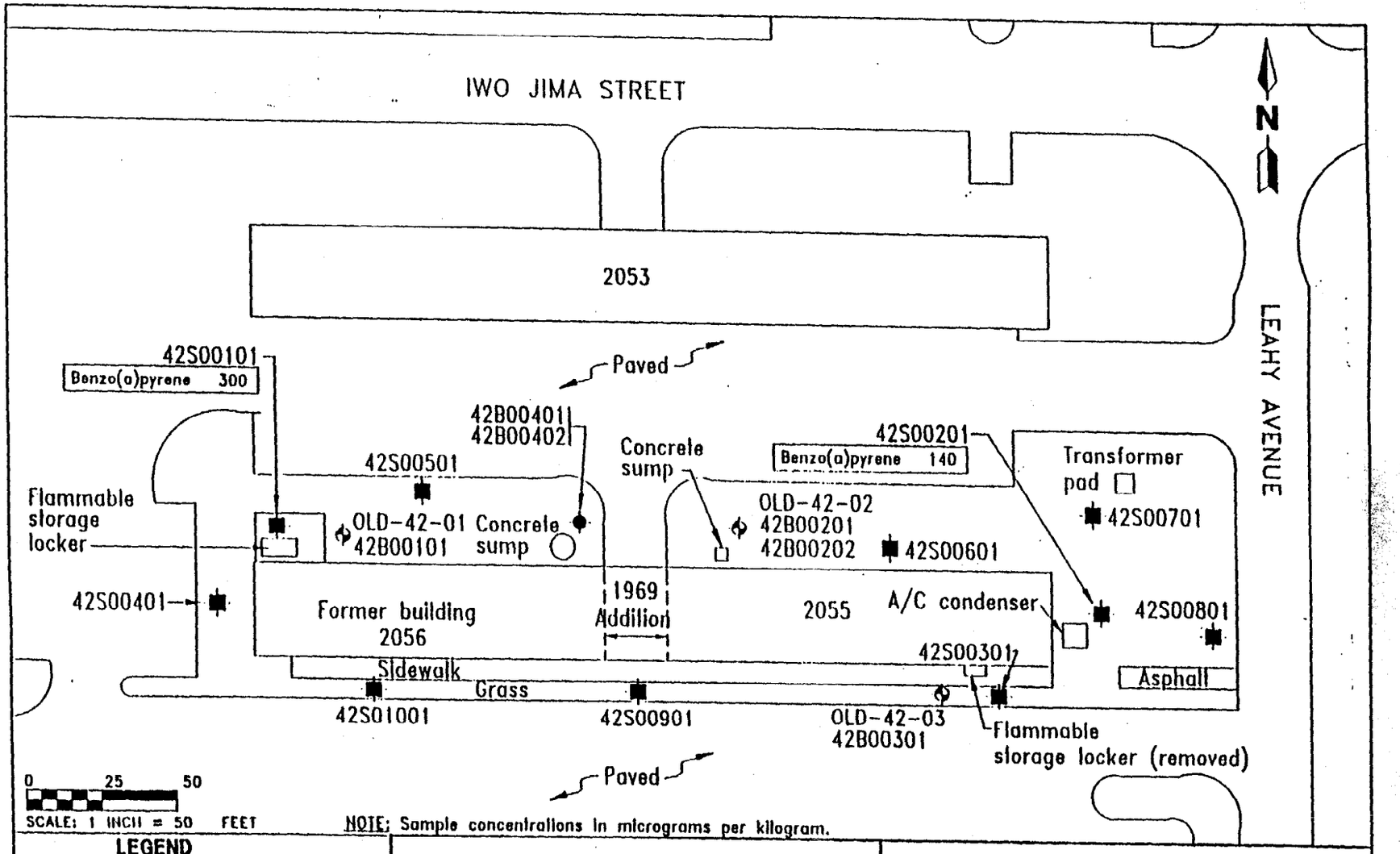
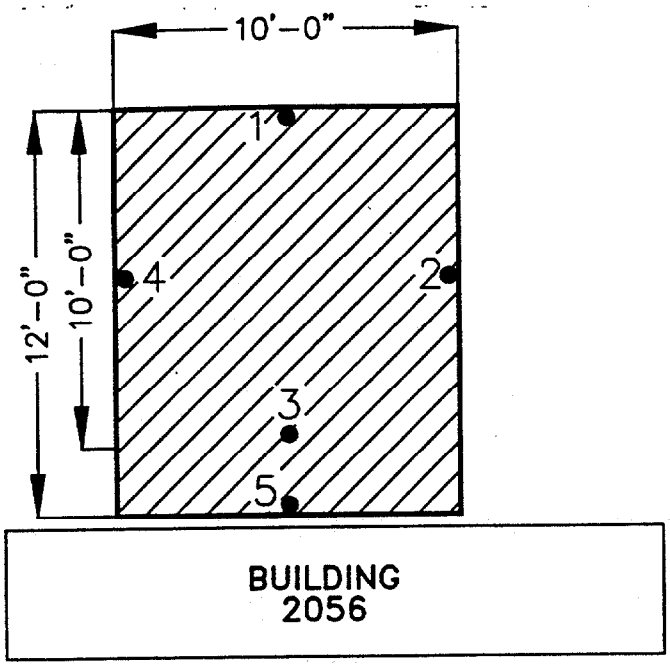


FIGURE 2
SURFACE SOIL, SOIL BORING, AND MONITORING WELL LOCATIONS, BUILDING 2055, AIR CONDITIONER AND VENDING MACHINE MAINTENANCE

BASE REALIGNMENT AND CLOSURE ENVIRONMENTAL SITE SCREENING REPORT, STUDY AREA 42

NAVAL TRAINING CENTER ORLANDO, FLORIDA



LEGEND

1 ●	CONFIRMATORY SAMPLE ID 99SPORT0161-5
2 ●	CONFIRMATORY SAMPLE ID 99SPORT0161-6
3 ●	CONFIRMATORY SAMPLE ID 99SPORT0161-7
4 ●	CONFIRMATORY SAMPLE ID 99SPORT0161-8
5 ●	CONFIRMATORY SAMPLE ID 99SPORT0191-1
▨	EXCAVATED TO 1 FOOT DEEP

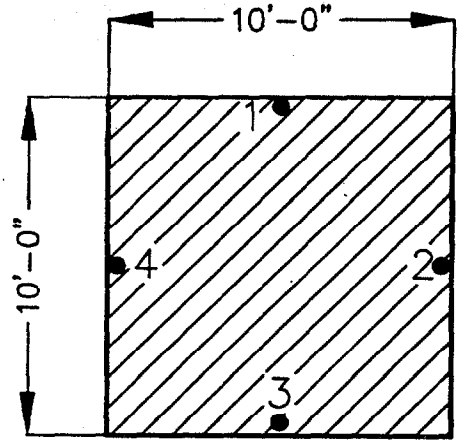
N

ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE - BUILDING 30
NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

FIGURE 3
NAVAL TRAINING CENTER CENTER ORLANDO SA 42
EXCAVATION BOUNDARIES AND
CONFIRMATORY SAMPLE LOCATIONS

DATE:	PREPARED BY:	REV
19 JULY 1999	A. J. MOYER	-

SCALE: NONE | SHEET: -



LEGEND

1 ● CONFIRMATORY SAMPLE ID 99SPORT0161-1

2 ● CONFIRMATORY SAMPLE ID 99SPORT0161-2

3 ● CONFIRMATORY SAMPLE ID 99SPORT0161-3

4 ● CONFIRMATORY SAMPLE ID 99SPORT0161-4

EXCAVATED TO 1 FOOT DEEP

N

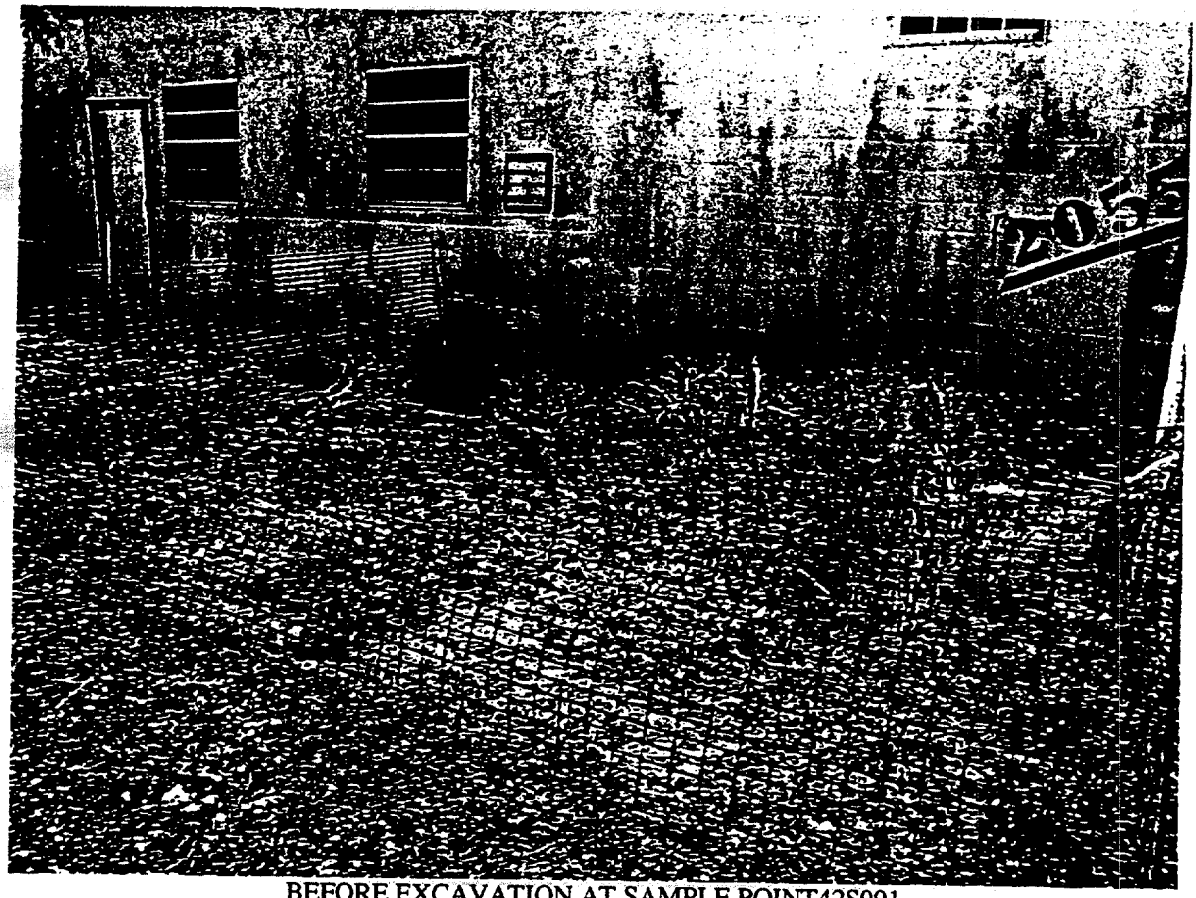
ENVIRONMENTAL DETACHMENT CHARLESTON
1899 NORTH HOBSON AVENUE – BUILDING 30
NORTH CHARLESTON, SOUTH CAROLINA 29405-2106

FIGURE 4
NAVAL TRAINING CENTER CENTER ORLANDO SA 42
EXCAVATION BOUNDARIES AND
CONFIRMATORY SAMPLE LOCATIONS

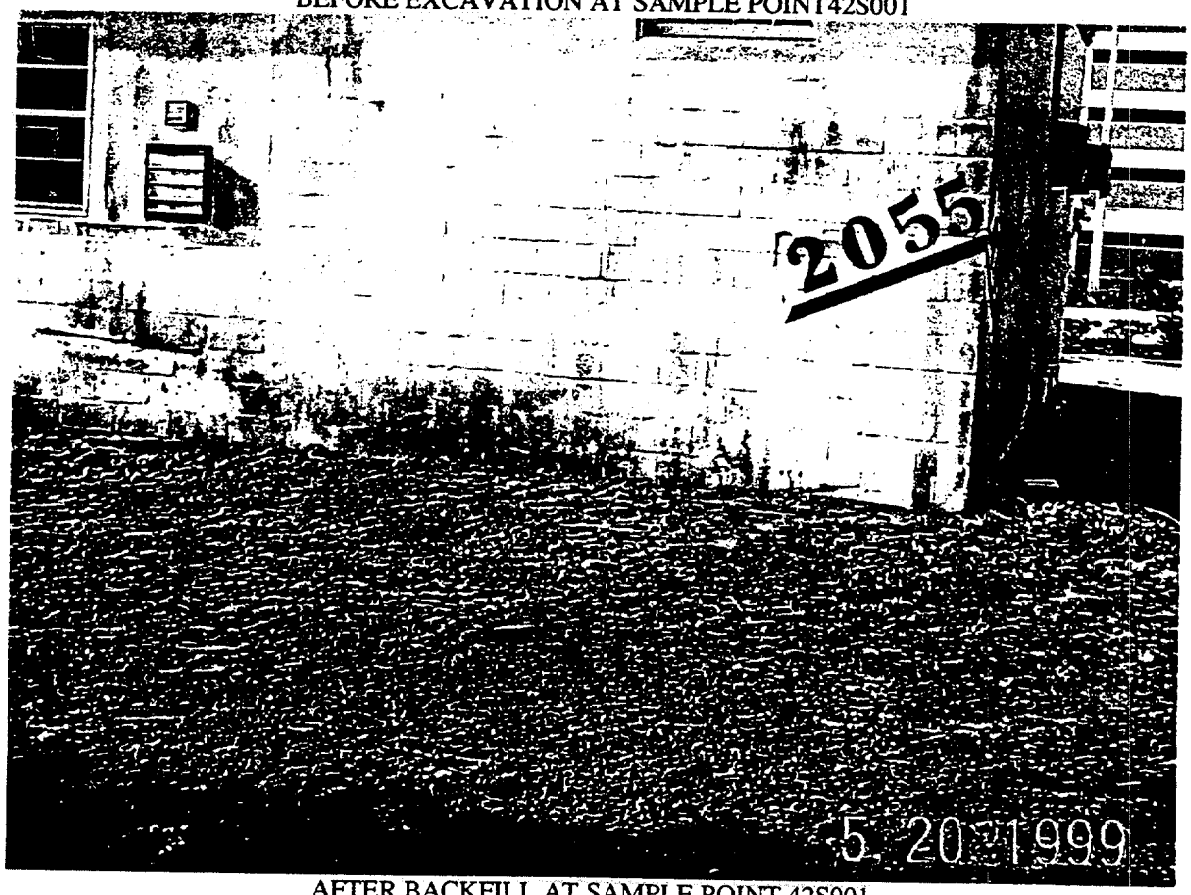
DATE:	PREPARED BY:	REV
19 JULY 1999	A. J. MOYER	–

SCALE: NONE | SHEET: –

SITE PHOTOGRAPHS

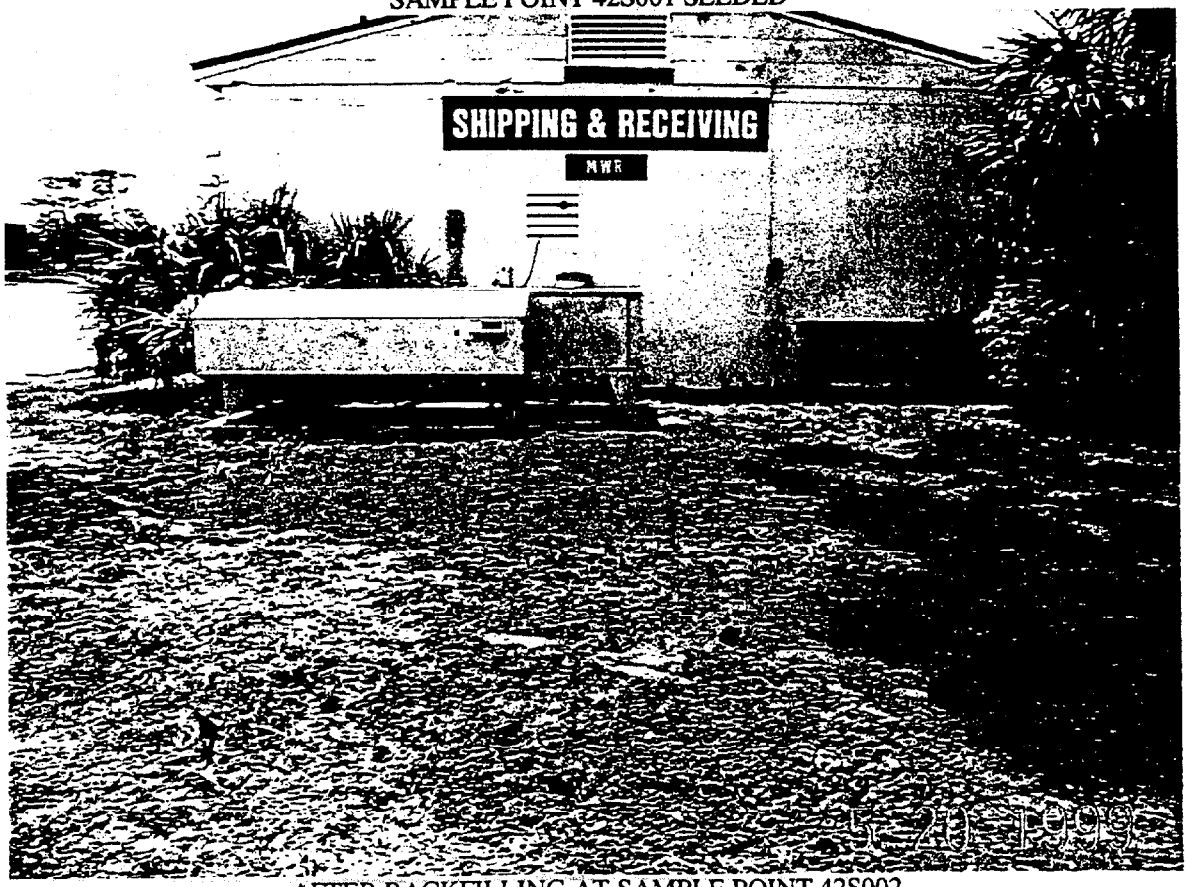


BEFORE EXCAVATION AT SAMPLE POINT42S001



AFTER BACKFILL AT SAMPLE POINT 42S001

SAMPLE POINT 42S001 SEEDED



AFTER BACKFILLING AT SAMPLE POINT 42S002

SAMPLE POINT 42S002 SEEDED

SAMPLING DOCUMENTATION

CONFIRMATION SAMPLES

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87-
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID	: 99SPORT0161-5
Lab ID	: 9904953-05
Matrix	: Soil
Date Collected	: 04/29/99
Date Received	: 04/30/99
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 18 items											
1-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0	JPA	05/05/99	0934	148065	1
2-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthylene	J	31.7	6.66	33.3	ug/kg	1.0					
Anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)anthracene		57.1	6.66	33.3	ug/kg	1.0					
Benzo(a)pyrene		92.8	6.66	33.3	ug/kg	1.0					
Benzo(b)fluoranthene		164	6.66	33.3	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(k)fluoranthene		67.4	6.66	33.3	ug/kg	1.0					
Chrysene		126	6.66	33.3	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	26.6	33.3	ug/kg	1.0					
Fluoranthene		155	6.66	33.3	ug/kg	1.0					
Fluorene	U	ND	6.66	33.3	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	23.3	33.3	ug/kg	1.0					
Naphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Phenanthrene		64.8	6.66	33.3	ug/kg	1.0					
Pyrene		226	6.66	33.3	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds CPU 05/04/99 1800 148065 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Fluorobiphenyl	M610-5972	51.8	(44.7 - 110.)

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407

(843) 556-8171 • Fax (843) 766-1178

9904953-05

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID : 99SPORT0161-5

Surrogate Recovery	Test	Percent%	Acceptable Limits
Nitrobenzene-d5	M610-5972	42.7	(42.4 - 107.)
p-Terphenyl-d14	M610-5972	84.1	(45.5 - 104.)

M = Method	Method-Description
M 1	EPA 8270
M 2	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.

E Hanson

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407

(843) 556-8171 • Fax (843) 766-1178

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID	: 99SPORT0161-6
Lab ID	: 9904953-06
Matrix	: Soil
Date Collected	: 04/29/99
Date Received	: 04/30/99
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 18 items											
:thylnaphthalene	U	ND	6.66	33.3	ug/kg	1.(	JPA	05/04/99	1628	148065	1
..iethylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthylene	U	ND	6.66	33.3	ug/kg	1.0					
Anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)anthracene	J	25.6	6.66	33.3	ug/kg	1.0					
Benzo(a)pyrene		40.5	6.66	33.3	ug/kg	1.0					
Benzo(b)fluoranthene		79.9	6.66	33.3	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(k)fluoranthene	J	30.2	6.66	33.3	ug/kg	1.0					
Chrysene		60.1	6.66	33.3	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	26.6	33.3	ug/kg	1.0					
Fluoranthene		74.1	6.66	33.3	ug/kg	1.0					
Fluorene	U	ND	6.66	33.3	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	23.3	33.3	ug/kg	1.0					
Naphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Phenanthrene		35.7	6.66	33.3	ug/kg	1.0					
Pyrene		102	6.66	33.3	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds RDH 05/03/99 0800 148065 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
orobiphenyl	M610-5972	52.5	(44.7 - 110.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID : 99SPORT0161-6

Surrogate Recovery	Test	Percent%	Acceptable Limits
Nitrobenzene-d5	M610-5972	47.8	(42.4 - 107.)
p-Terphenyl-d14	M610-5972	71.8	(45.5 - 104.)

M = Method	Method-Description
M 1	EPA 8270
M 2	EPA 3550

Notes:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager. Elise Hanson at 843-556-8171.

Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID	: 99SPORT0161-7
Lab ID	: 9904953-07
Matrix	: Soil
Date Collected	: 04/29/99
Date Received	: 04/30/99
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 18 items											
Methylnaphthalene	U	ND	26.6	133	ug/kg	4.0	JPA	05/04/99	1655	148065	1
Methylnaphthalene	U	ND	26.6	133	ug/kg	4.0					
Acenaphthene	U	ND	26.6	133	ug/kg	4.0					
Acenaphthylene		166	26.6	133	ug/kg	4.0					
Anthracene	U	ND	26.6	133	ug/kg	4.0					
Benzo(a)anthracene		247	26.6	133	ug/kg	4.0					
Benzo(a)pyrene		456	26.6	133	ug/kg	4.0					
Benzo(b)fluoranthene		778	26.6	133	ug/kg	4.0					
Benzo(ghi)perylene	U	ND	26.6	133	ug/kg	4.0					
Benzo(k)fluoranthene		283	26.6	133	ug/kg	4.0					
Chrysene		529	26.6	33.3	ug/kg	4.0					
Dibenzo(a,h)anthracene	U	ND	107	133	ug/kg	4.0					
Fluoranthene		604	26.6	133	ug/kg	4.0					
Fluorene	U	ND	26.6	133	ug/kg	4.0					
Indeno(1,2,3-c,d)pyrene	U	ND	93.2	133	ug/kg	4.0					
Naphthalene	U	ND	26.6	133	ug/kg	4.0					
Phenanthrene		159	26.6	133	ug/kg	4.0					
Pyrene		871	26.6	133	ug/kg	4.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds RDH 05/03/99 0800 148065 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Fluorobiphenyl	M610-5972	57.3	(44.7 - 110.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID : 99SPORT0161-7

Surrogate Recovery	Test	Percent%	Acceptable Limits
Nitrobenzene-d5	M610-5972	44.4	(42.4 - 107.)
p-Terphenyl-d14	M610-5972	80.7	(45.5 - 104.)

M = Method	Method-Description
M 1	EPA 8270
M 2	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Elise Hanson at 843-556-8171.

E Hanson

Reviewed By

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/8
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID	: 99SPORT0161-8
Lab ID	: 9904953-08
Matrix	: Soil
Date Collected	: 04/29/99
Date Received	: 04/30/99
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 18 items											
2-Methylnaphthalene	U	ND	26.6	133	ug/kg	4.0	JPA	05/04/99	1722	148065	
1-Methylnaphthalene	U	ND	26.6	133	ug/kg	4.0					
Acenaphthene	U	ND	26.6	133	ug/kg	4.0					
Acenaphthylene	U	ND	26.6	133	ug/kg	4.0					
Anthracene	J	66.9	26.6	133	ug/kg	4.0					
Benzo(a)anthracene	J	106	26.6	133	ug/kg	4.0					
Benzo(a)pyrene	J	86.6	26.6	133	ug/kg	4.0					
Benzo(b)fluoranthene		152	26.6	133	ug/kg	4.0					
Benzo(ghi)perylene	U	ND	26.6	133	ug/kg	4.0					
Benzo(k)fluoranthene	U	ND	26.6	133	ug/kg	4.0					
Chrysene		110	26.6	33.3	ug/kg	4.0					
Dibenzo(a,h)anthracene	U	ND	107	133	ug/kg	4.0					
Fluoranthene		140	26.6	133	ug/kg	4.0					
Fluorene	U	ND	26.6	133	ug/kg	4.0					
Indeno(1,2,3-c,d)pyrene	U	ND	93.2	133	ug/kg	4.0					
Naphthalene	U	ND	26.6	133	ug/kg	4.0					
Phenanthrene	U	ND	26.6	133	ug/kg	4.0					
Pyrene		190	26.6	133	ug/kg	4.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds RDH 05/03/99 0800 148065 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Decachlorobiphenyl	M610-5972	52.4	(44.7 - 110.)

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9904953-08

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID : 99SPORT0161-8

Surrogate Recovery	Test	Percent%	Acceptable Limits
Nitrobenzene-d5	M610-5972	44.0	(42.4 - 107.)
p-Terphenyl-d14	M610-5972	81.0	(45.5 - 104.)

M = Method	Method-Description
M 1	EPA 8270
M 2	EPA 3550

Notes:
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E Hanson

Reviewed By

— 3-DAY TURNAROUND —

CHAIN OF CUSTODY RECORD

General Engineering Lab[illegible]ces, Inc
2040 Savage Road
Charleston, South Carolin[illegible]07
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

Page 1 of 2

Client Name/Facility Name: NTC Orlando SA42 & 37

Collected by/Company: ENV DET CHASN

SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticides 8081	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	PAH 8310	Remarks
99Sport 0161-1	4/29/99	1300		X	X		1																X	SA42S002 Location
99Sport 0161-2	4/29/99	1310		X	X		1																X	
99Sport 0161-3	4/29/99	1325		X	X		1																X	
99Sport 0161-4	4/29/99	1335		X	X		1																X	
99Sport 0161-5	4/29/99	1400		X	X		1																X	SA42S001 Location
99Sport 0161-6	4/29/99	1409		X	X		1																X	
99Sport 0161-7	4/29/99	1420		X	X		1																X	
99Sport 0161-8	4/29/99	1430		X	X		1																X	
99Sport 0161-9	4/29/99	1435	X				2																X	Field Blank SA-42S001 Location SA42F-0161-9
99Sport 0161-10	4/29/99	1450		X	X		1								X									SA-37 Location
99Sport 0161-11	4/29/99	1500		X	X		1								X									
99Sport 0161-12	4/29/99	1509		X	X		1								X									
99Sport 0161-13	4/29/99	1517		X	X		1								X									

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Relinquished by:	Date:	Time:	Received by:
K W Cope	4/29/99	1900	RWC Michael P. Schulz
Relinquished by:	Date:	Time:	Received by lab by:
Michael P. Schulz	4/30/99	1145	

Remarks:

White = s collector Yellow = file Pink = with report

— 3 DAY TURN AROUND —

CHAIN OF CUSTODY RECORD

General Engineering Lab[illegible]ies, Inc.
2040 Savage Road
Charleston, South Carolin[illegible]07
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

Page 2 of 2

Client Name/Facility Name: NTC Orlando SA-42+37

Collected by/Company: ENV DET CHASN

SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide 8081	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	Remarks
99Sport0161-14	4/29/99	1525		X	X		1								X								SA-37 Location

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
K W Cole	4/29/99	1800	[signature]	[signature]	4/30/99	1145	
Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:	
			[signature]	4-30-99	1145		

White = collector Yellow = file Pink = with report

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 21, 1999

Sample ID	: 99SPORT0191-1
Lab ID	: 9905674-01
Matrix	: Soil
Date Collected	: 05/19/99
Date Received	: 05/20/99
Priority	: Urgent
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 16 items											
Acenaphthene	U	ND	630	1310	ug/kg	4.0	JPA	05/21/99	1041	149649	1
Acenaphthylene	U	ND	577	1310	ug/kg	4.0					
Anthracene	U	ND	341	1310	ug/kg	4.0					
Benzo(a)anthracene	U	ND	262	1310	ug/kg	4.0					
Benzo(a)pyrene	U	ND	289	1310	ug/kg	4.0					
Benzo(b)fluoranthene	U	ND	564	1310	ug/kg	4.0					
Benzo(ghi)perylene	U	ND	315	1310	ug/kg	4.0					
Benzo(k)fluoranthene	U	ND	525	1310	ug/kg	4.0					
Chrysene	U	ND	210	1310	ug/kg	4.0					
Dibenzo(a,h)anthracene	U	ND	328	1310	ug/kg	4.0					
Fluoranthene	U	ND	262	1310	ug/kg	4.0					
Fluorene	U	ND	446	1310	ug/kg	4.0					
Indeno(1,2,3-c,d)pyrene	U	ND	315	1310	ug/kg	4.0					
Naphthalene	U	ND	617	1310	ug/kg	4.0					
Phenanthrene	U	ND	236	1310	ug/kg	4.0					
Pyrene	U	ND	289	1310	ug/kg	4.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds AEJ 05/20/99 1700 149649 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
2-Fluorobiphenyl	M610	65.2	(44.7 - 110.)
Nitrobenzene-d5	M610	56.0	(42.4 - 107.)
Terphenyl-d14	M610	80.6	(45.5 - 104.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 21, 1999

Sample ID : 99SPORT0191-1

Surrogate Recovery	Test	Percent%	Acceptable Limits

M = Method	Method-Description
M 1	EPA 8270C
M 2	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Elise Hanson at 843-556-8171.

E Hanson

Reviewed By

PNC00197

990.) 74%

Page 1 of 1

CHAIN OF CUSTODY RECORD

General Engineering Laboratories, Inc.
2040 Savage Road
Charleston, South Carolina 29407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

Client Name/Facility Name: NTC Orlando

Collected by/Company: ENV Det Chasn

SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	8270 PAH	Remarks
01 99Sport0191-1	5/19/99	1500		X		X	1																X	SA42S001 site against Bldg. 2056

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

40369

Relinquished by:	Date:	Time:	Received by:
K W Cole	5/19/99	1700	
Relinquished by:	Date:	Time:	Received by lab by:
			Frances

Relinquished by:	Date:	Time:	Received by:
	5/20/99	930	

Remarks:

White : le collector Yellow = file Pink = with report

GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID	: 99SPORT0161-1
Lab ID	: 9904953-01
Matrix	: Soil
Date Collected	: 04/29/99
Date Received	: 04/30/99
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 18 items											
-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0	JPA	05/05/99	0906	148065	1
2-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthylene	U	ND	6.66	33.3	ug/kg	1.0					
Anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)pyrene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(b)fluoranthene	J	20.4	6.66	33.3	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(k)fluoranthene	J	18.1	6.66	33.3	ug/kg	1.0					
Chrysene	J	18.1	6.66	33.3	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	26.6	33.3	ug/kg	1.0					
Fluoranthene	J	17.2	6.66	33.3	ug/kg	1.0					
Fluorene	U	ND	6.66	33.3	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	23.3	33.3	ug/kg	1.0					
Naphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Phenanthrene	U	ND	6.66	33.3	ug/kg	1.0					
Pyrene	J	18.6	6.66	33.3	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds CPU 05/04/99 1800 148065 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Fluorobiphenyl	M610-5972	48.4	(44.7 - 110.)

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9904953-01

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID : 99SPORT0161-1

Surrogate Recovery	Test	Percent%	Acceptable Limits
Nitrobenzene-d5	M610-5972	47.4	(42.4 - 107.)
p-Terphenyl-d14	M610-5972	84.3	(45.5 - 104.)

M = Method	Method-Description
M 1	EPA 8270
M 2	EPA 3550

Notes:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager. Elise Hanson at 843-556-8171.

E Hanson

Reviewed By

P O Box 30712 • Charleston, SC 29417 • 2040 Savage Road • 29407
(843) 556-8171 • Fax (843) 766-1178

GENERAL ENGINEERING LABORATORIES

Meeting today's needs with a vision for tomorrow.

Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID	: 99SPORT0161-2
Lab ID	: 9904953-02
Matrix	: Soil
Date Collected	: 04/29/99
Date Received	: 04/30/99
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 18 items											
Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0	JPA	05/04/99	1438	148065	1
2-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthylene	U	ND	6.66	33.3	ug/kg	1.0					
Anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)pyrene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(b)fluoranthene	J	24.7	6.66	33.3	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	6.66	33.3	ug/kg	1.0					
Chrysene	U	ND	6.66	33.3	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	26.6	33.3	ug/kg	1.0					
Fluoranthene	J	18.2	6.66	33.3	ug/kg	1.0					
Fluorene	U	ND	6.66	33.3	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	23.3	33.3	ug/kg	1.0					
Naphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Phenanthrene	U	ND	6.66	33.3	ug/kg	1.0					
Pyrene	J	18.9	6.66	33.3	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds RDH 05/03/99 0800 148065 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Fluorobiphenyl	M610-5972	54.4	(44.7 - 110.)

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston. South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID : 99SPORT0161-2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Nitrobenzene-d5	M610-5972	52.9	(42.4 - 107.)
p-Terphenyl-d14	M610-5972	77.6	(45.5 - 104.)

M = Method	Method-Description
M 1	EPA 8270
M 2	EPA 3550

Notes:
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager. Elise Hanson at 843-556-8171.

Reviewed By

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87.
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID	: 99SPORT0161-3
Lab ID	: 9904953-03
Matrix	: Soil
Date Collected	: 04/29/99
Date Received	: 04/30/99
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 18 items											
-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0	JPA	05/04/99	1505	148065	1
2-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthylene	U	ND	6.66	33.3	ug/kg	1.0					
Anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)pyrene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(b)fluoranthene	J	21.1	6.66	33.3	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	6.66	33.3	ug/kg	1.0					
Chrysene	U	ND	6.66	33.3	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	26.6	33.3	ug/kg	1.0					
Fluoranthene	U	ND	6.66	33.3	ug/kg	1.0					
Fluorene	U	ND	6.66	33.3	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	23.3	33.3	ug/kg	1.0					
Naphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Phenanthrene	U	ND	6.66	33.3	ug/kg	1.0					
Pyrene	U	ND	6.66	33.3	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds RDH 05/03/99 0800 148065 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Fluorobiphenyl	M610-5972	62.8	(44.7 - 110.)

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STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID : 99SPORT0161-3

Surrogate Recovery	Test	Percent%	Acceptable Limits
Nitrobenzene-d5	M610-5972	61.6	(42.4 - 107.)
p-Terphenyl-d14	M610-5972	79.7	(45.5 - 104.)

M = Method	Method-Description
M 1	EPA 8270
M 2	EPA 3550

Notes:
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Reviewed By

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GENERAL ENGINEERING LABORATORIES

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/87
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID	: 99SPORT0161-4
Lab ID	: 9904953-04
Matrix	: Soil
Date Collected	: 04/29/99
Date Received	: 04/30/99
Priority	: Rush
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
Extractable Organics											
Polynuclear Aromatic Hydrocarbons - 18 items											
1-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0	JPA	05/04/99	1533	148065	1
2-Methylnaphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthene	U	ND	6.66	33.3	ug/kg	1.0					
Acenaphthylene	U	ND	6.66	33.3	ug/kg	1.0					
Anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)anthracene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(a)pyrene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(b)fluoranthene	J	27.9	6.66	33.3	ug/kg	1.0					
Benzo(ghi)perylene	U	ND	6.66	33.3	ug/kg	1.0					
Benzo(k)fluoranthene	U	ND	6.66	33.3	ug/kg	1.0					
Chrysene	J	18.7	6.66	33.3	ug/kg	1.0					
Dibenzo(a,h)anthracene	U	ND	26.6	33.3	ug/kg	1.0					
Fluoranthene	U	ND	6.66	33.3	ug/kg	1.0					
Fluorene	U	ND	6.66	33.3	ug/kg	1.0					
Indeno(1,2,3-c,d)pyrene	U	ND	23.3	33.3	ug/kg	1.0					
Naphthalene	U	ND	6.66	33.3	ug/kg	1.0					
Phenanthrene	U	ND	6.66	33.3	ug/kg	1.0					
Pyrene	J	18.8	6.66	33.3	ug/kg	1.0					

The following prep procedures were performed:

GC/MS Base/Neutral Compounds RDH 05/03/99 0800 148065 2

Surrogate Recovery	Test	Percent%	Acceptable Limits
Fluorobiphenyl	M610-5972	61.4	(44.7 - 110.)

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9904953-04

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Laboratory Certifications

STATE	GEL	EPI
FL	E87156/87294	E87472/874
NC	233	
NJ	79002	79002
SC	10120	10582
TN	02934	02934

Client: Supervisor of Ship Building & Conversion
SUPSHIP-Portsmouth Detachment-Env.
1899 North Hobson Ave.
North Charleston, South Carolina 29405-2106
Contact: Mr. Bill Hiers
Project Description: SUPSHIP-Portsmouth Detachment

cc: NPWC00197 Report Date: May 05, 1999

Sample ID : 99SPORT0161-4

Surrogate Recovery	Test	Percent%	Acceptable Limits
Nitrobenzene-d5	M610-5972	60.4	(42.4 - 107.)
p-Terphenyl-d14	M610-5972	74.6	(45.5 - 104.)

M = Method	Method-Description
M 1	EPA 8270
M 2	EPA 3550

Notes:
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E Hanson

Reviewed By

— 3-DAY TURN AROUND —

CHAIN OF CUSTODY RECORD

General Engineering Lab[illegible]ies, Inc.
2040 Savage Road
Charleston, South Carolin[illegible]07
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

Page 1 of 2

Client Name/Facility Name: NTC Orlando SA42437

Collected by/Company: ENV DET CHASN

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide 8081	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	PAH 8310	Remarks
99Sport 0161-1	4/29/99	1300		X	X		1																X	SA42S002 Location
99Sport 0161-2	4/29/99	1310		X	X		1																X	1
99Sport 0161-3	4/29/99	1325		X	X		1																X	
99Sport 0161-4	4/29/99	1335		X	X		1																X	
99Sport 0161-5	4/29/99	1400		X	X		1																X	SA42S001 Location
99Sport 0161-6	4/29/99	1409		X	X		1																X	
99Sport 0161-7	4/29/99	1420		X	X		1																X	
99Sport 0161-8	4/29/99	1430		X	X		1																X	
99Sport 0161-9	4/29/99	1435	X				2																X	Field Blank SA-42S001 Location SA42F-0161-9
99Sport 0161-10	4/29/99	1450		X	X		1								X									SA-37 Location
99Sport 0161-11	4/29/99	1500		X	X		1								X									
99Sport 0161-12	4/29/99	1509		X	X		1								X									
99Sport 0161-13	4/29/99	1517		X	X		1								X									

Relinquished by:	Date:	Time:	Received by:	Relinquished by:	Date:	Time:	Received by:
K W Cope	4/29/99	1700	RWC Michael P. Rhodes	Michael P. Rhodes	4/30/99	1145	

Relinquished by:	Date:	Time:	Received by lab by:	Date:	Time:	Remarks:
				1-30-99	1145	

— 3 DAY TURNAROUND —

CHAIN OF CUSTODY RECORD

General Engineering Labs, Inc.
2040 Savage Road
Charleston, South Carolina 407
P.O. Box 30712
Charleston, South Carolina 29417
(803) 556-8171

Page 2 of 2

Client Name/Facility Name: NTC Orlando SA-42+37

Collected by/Company: ENV DET CHASN

SAMPLE ID	DATE	TIME	WELL	SOIL	COMP	GRAB	# OF CONTAINERS	pH, conductivity	TOC/DOC	TOX	Chloride, Fluoride, Sulfide	Nitrite/Nitrate	VOC - Specify Method required	METALS - specify	Pesticide 8081	Herbicide	Total Phenol	Acid Extractables	B/N Extractables	PCB's	Cyanide	Coliform - specify type	Remarks
99Sport0161-14	4/29/99	1525		X	X		1								X								SA-37 Location

SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods

Use F or P in the boxes to indicate whether sample was filtered and/or preserved

Relinquished by:	Date:	Time:	Received by:
K W Cope	4/29/99	1800	
Relinquished by:	Date:	Time:	Received by lab:

Relinquished by:	Date:	Time:	Received by:
	4/30/99	1145	
Date:	Time:	Remarks:	
4-30-99	1145		

White = collector Yellow = file Pink = with report

WASTE CHARACTERIZATION

RESULTS OF ANALYSIS

TCLP METALS	METHOD	SA-42002	SA-42001	Units
TCLP Arsenic	1311/7060	0.050 U	0.050 U	mg/L
Date Analyzed		04/23/99	04/23/99	
TCLP Barium	1311/7080	2.0 U	2.0 U	mg/L
Date Analyzed		04/23/99	04/23/99	
TCLP Cadmium	1311/7130	0.10 U	0.10 U	mg/L
Date Analyzed		04/23/99	04/23/99	
TCLP Chromium	1311/7190	0.50 U	0.50 U	mg/L
Date Analyzed		04/23/99	04/23/99	
TCLP Lead	1311/7420	0.50 U	0.50 U	mg/L
Date Analyzed		04/23/99	04/23/99	
TCLP Mercury	1311/7470	0.0050 U	0.0050 U	mg/L
Date Analyzed		04/26/99	04/26/99	
TCLP Selenium	1311/7740	0.050 U	0.050 U	mg/L
Date Analyzed		04/25/99	04/25/99	
TCLP Silver	1311/7760	0.20 U	0.20 U	mg/L
Date Analyzed		04/23/99	04/23/99	

U - Compound was analyzed for but not detected to the level shown.

QSARF # _____

ENVIRONMENTAL CONSERVATION LABORATORIES

4810 Executive Park Court, Suite 211
Jacksonville, Florida 32216-6069
Ph. (904) 296-3007 • Fax (904) 296-6210

10207 General Drive
Orlando, Florida 32824
Ph. (407) 826-5314 • Fax (407) 850-6945

ENCO CompQAP No.: 960038G/0

CHAIN OF CUSTODY RECORD

PROJECT REFERENCE: NTC Orlando | PROJECT NO: | P.O. NUMBER: | PAGE: | OF:

PROJECT LOC. (State): FL | SAMPLER(s) NAME: R. Cope | PHONE: 496-2173 | FAX: 861-5468

CLIENT NAME: ENV DET CHASN | CLIENT PROJECT MANAGER: Ross Jamerson

CLIENT ADDRESS (CITY, STATE, ZIP): 1899 N. Hobson Ave N. Charleston, S.C 29405

☐ STANDARD REPORT DELIVERY

☐ EXPEDITED REPORT DELIVERY (surcharge)

Date Due:

SAMPLE STATION	DATE	TIME	GRAB	COMP	SAMPLE IDENTIFICATION	MATRIX TYPE: SURFACE WATER	GROUND WATER	WASTEWATER	DRINKING WATER	SOIL/SOLID/SEDIMENT	NONAQUEOUS LIQUID (oil, solvent, etc.)	AIR	SLUDGE	OTHER	REQUIRED ANALYSIS: TCLP Metals	TCLP Pesticides	NUMBER OF CONTAINERS SUBMITTED	REMARKS
1	4/20/99	1450	X		SA-35009					✓					X1			
2	4/20/99	1505	X		SA 35013					✓					X1			
3	4/20/99	1540	X		SA-35015					✓					X1			
4	4/20/99	1640		X	SA-80001					✓					1	X	TCLP Pesticides Requested on 4-28-99.	5 Locations Area A
5	4/20/99	1700		X	SA-80002					✓					1	X		5 Locations Area B
6	4/20/99	1720		X	SA-80003					✓					1	X		5 Locations Area C
7	4/21/99	1010	X		SA-42002					✓					1			
8	4/21/99	1022	X		SA-42001					✓					1			
9	4/21/99	1120	X		SA-23005					✓					1			McCoy Annex
10	4/21/99	1145		X	SA-18008					✓						1		" 5 Locations
11	4/21/99	1201		X	SA-17035					✓						1		" 5 Locations
12																		
13																		
14																		

SAMPLE KIT PREPARED BY: ☐JACKSONVILLE ☐ORLANDO	DATE: 4/21/99	TIME: 1240	RELINQUISHED BY: (SIGNATURE) K W Cope	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
RELINQUISHED BY: (SIGNATURE)	DATE: 4/21/99	TIME: 1240	RECEIVED BY: (SIGNATURE) David L. Henry	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
RECEIVED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	ENCO LOG NO.	REMARKS
K. [illegible]	4/[illegible]				